

SEARCH REQUEST FORM

1160584

Requestor's Name: Irene MarxSerial Number: 101077283Date: 3/14/84Phone: 20919Art Unit: 16513E71**Search Topic:**

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevant citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevant claim(s).

Please search

- Inventors
(claims 1-3, 8 & 9 elected)
- composition of 2 or more keto cycle
(citric acid cycle) intermediates
- 2 or more compounds of cl. 3.
- cl 3 products + products of cl. 8
- cl 3 products + tablet, injection,
composition as tablet, injection,
inhalant, suppository etc.
fusion,

STAFF USE ONLYDate completed: 3/14/84Searcher: a

Terminal time: _____

Elapsed time: 10 + 100

CPU time: _____

Total time: _____

Number of Searches: _____

Number of Databases: _____

Search Site STIC CM-1 Pre-S**Type of Search** N.A. Sequence A.A. Sequence Structure Bibliographic**Vendors** IG STN Dialog APS Geninfo SDC DARC/Questel Other



STIC Search Report

Biotech-Chem Library

STIC Database Tracking Number 116686

TO: Irene Marx
Location: 3a79
Sunday, March 14, 2004 *3E11*
Art Unit: 1651
Phone: 272-0919
Serial Number: 10 / 077283

From: Jan Delaval
Location: Biotech-Chem Library
Rem 1A51
Phone: 272-2504
jan.delaval@uspto.gov

Search Notes

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=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 10:59:31 ON 14 MAR 2004
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FILE COVERS 1907 - 14 Mar 2004 VOL 140 ISS 12
FILE LAST UPDATED: 12 Mar 2004 (20040312/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d his

(FILE 'HOME' ENTERED AT 09:24:04 ON 14 MAR 2004)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 09:27:01 ON 14 MAR 2004

E RATH M/AU

L1	84 S E15-E17,E3-E7
L2	20 S L1 AND P/DT
	E KREBS/CT
	E E7+ALL
	E E2+ALL
L3	4758 S E3
L4	11174 S E3-E8/BI
L5	339 S CIS ACONITATE
L6	272 S CIS ACONITIC ACID
L7	357 S CIS(L)ACONITIC ACID
L8	126392 S CITRIC ACID OR CITRATE
L9	9135 S ISOCITRATE OR ISOCITRIC ACID
L10	23 S OXALSUCCINATE OR OXALSUCCINIC ACID
L11	148 S OXALSUCCINATE OR OXALOSUCCINATE OR (OXALSUCCINIC OR OXALOSUCC
L12	10044 S (ALPHA OR ALFA) ()(KETOGLUTARATE OR KETO GLUTARATE OR (KETOGLU
L13	267 S SUCCINYL() (COE OR COENZYME OR CO ENZYME) ()A
L14	10 S SUCCINATE() (COE OR COENZYME OR CO ENZYME) ()A
L15	477 S (SUCCINATE OR SUCCINYL) (L) (COE OR COENZYME OR CO ENZYME) ()A
L16	72540 S SUCCINATE OR SUCCINIC ACID
L17	29738 S FUMARATE OR FUMARIC ACID
L18	2877 S L() (MALATE OR MALIC ACID)
L19	7367 S OXALACETATE OR OXALACETIC ACID
L20	1835 S ACETYL() (COE OR COENZYME OR CO ENZYME) ()A
L21	9566 S ACETYL COA
L22	1140 S (SUCCINYL OR SUCCINATE) ()COA
L23	60484 S PYRUVATE OR PYRUVIC ACID

FILE 'REGISTRY' ENTERED AT 09:51:06 ON 14 MAR 2004

L24	12 S 110-15-6 OR 77-92-9 OR 585-84-2 OR 320-77-4 OR 1948-82-9 OR 3
L25	44084 S (110-15-6 OR 77-92-9 OR 585-84-2 OR 320-77-4 OR 1948-82-9 OR
L26	32099 S L25 NOT ((PMS OR CCS OR AYS OR MNS OR MXS OR IDS)/CI OR COMPD
L27	32083 S L26 NOT SQL/FA

L28 2 S L24 AND NR>=1
 L29 9 S L27 AND (604-98-8 OR 72-89-9)/CRN
 L30 30372 S L27 AND NR>=1
 L31 1711 S L27 NOT L30
 L32 1720 S L29,L31

FILE 'HCAPLUS' ENTERED AT 09:54:20 ON 14 MAR 2004

L33 114420 S L24 OR L32
 L34 298526 S L3-L23,L33
 L35 2987 S LIPOIC ACID
 L36 1254 S LIPOAMIDE
 L37 0 S ACETYL LIPOAMIDE OR ACETYL LIPOAMIDE
 L38 0 S LIPOAMIDE() (ACETYL OR ACETATE)
 L39 16 S LIPOAMIDE(S) (ACETYL OR ACETATE OR ACETIC ACID)
 L40 3 S L36(L) DIACET?
 L41 0 S DIACETYL LIPOAMIDE
 L42 1 S DIACETYL LIPOAMIDE
 L43 93776 S LYSINE
 L44 8921 S CARNITINE
 L45 85808 S ASCORBATE OR ASCORBIC ACID
 L46 20046 S THIAMINE
 L47 12222 S RIBOFLAVIN
 L48 19052 S NICOTINIC ACID
 L49 920 S NIACINAMIDE
 L50 8658 S PANTOTHENATE OR PANTOTHENIC ACID
 L51 5835 S NICOTINAMIDE ADENINE DINUCLEOTIDE
 L52 2268 S REDUCED NICOTINAMIDE ADENINE DINUCLEOTIDE
 L53 2221 S NICOTINAMIDE ADENINE DINUCLEOTIDE PHOSPHATE
 L54 925 S REDUCED NICOTINAMIDE ADENINE DINUCLEOTIDE PHOSPHATE
 L55 2578 S QUINOLINATE OR QUINOLINIC ACID
 L56 8784 S FLAVIN ADENINE DINUCLEOTIDE
 L57 3 S REDUCED FLAVIN ADENINE DINUCLEOTIDE
 L58 12 S REDUCED FLAVIN MONONUCLEOTIDE
 L59 3297 S ADENOSINE DIPHOSPHATE
 L60 13839 S ADENOSINE TRIPHOSPHATE
 L61 496 S GUANOSINE DIPHOSPHATE
 L62 1560 S GUANOSINE TRIPHOSPHATE
 L63 39884 S (MG OR MAGNESIUM OR CA OR CALCIUM OR MN OR MANGANESE) () ION
 L64 38 S (CU OR COPPER) () (FE OR IRON) () (SULFATE OR SULPHATE OR SO4)
 L65 10486 S (CU OR COPPER OR CUPR?) (L) (FE OR FE2 OR FERRIC OR FERROUS OR
 L66 562296 S MOLYBDENUM OR MO

FILE 'REGISTRY' ENTERED AT 10:19:04 ON 14 MAR 2004

L67 22 S 89-00-4 OR 146-14-5 OR 146-17-8 OR 5666-16-0 OR 58-64-0 OR 56
 L68 23 S 89-00-9 OR 146-14-5 OR 146-17-8 OR 5666-16-0 OR 58-64-0 OR 56
 L69 8 S 62624-30-0 OR 10504-35-5 OR 37138-77-5 OR 53-84-9 OR 53-59-8
 L70 2 S 10028-22-5 OR 7758-98-7
 L71 22612 S 7664-93-9/CRN
 L72 396 S L71 AND CU/ELS
 L73 430 S L71 AND FE/ELS
 L74 29 S L72 AND L73
 L75 14 S L74 NOT AYS/CI
 L76 5 S L75 NOT MXS/CI
 L77 2 S L76 NOT (GRAPHITE OR MNS/CI)
 L78 522 S L72,L73 NOT (AYS OR MXS OR MNS OR CCS)/CI
 L79 81 S L78 AND 2/NC
 L80 21 S L79 AND SALT
 L81 18 S L80 NOT (59FE OR 55FE OR N/ELS)
 L82 31 S L67-L69
 SEL RN
 L83 5357 S E1-E31/CRN
 L84 852 S L83 NOT ((AYS OR PMS OR MXS OR MNS OR CCS OR IDS)/CI OR COMPD
 L85 903 S L70,L77,L81,L82,L84

L86 418 S (MG OR CA OR MN OR MO)/MF
 L87 115 S L86 NOT ISOTOPE
 L88 1018 S L85,L87

FILE 'HCAPLUS' ENTERED AT 10:28:29 ON 14 MAR 2004
 L89 943555 S L88

FILE 'REGISTRY' ENTERED AT 10:28:59 ON 14 MAR 2004
 L90 1 S 940-69-2
 L91 773 S S2C3/ES AND 1/NR AND (O AND N)/ELS
 L92 111 S L91 AND ACET
 L93 55 S L92 AND 1/NC
 L94 35 S L93 NOT CCS/CI
 L95 56 S L92 NOT L93
 L96 33 S L95 NOT MXS/CI
 L97 11 S L96 NOT RU/ELS
 L98 4 S 940-69-2/CRN
 L99 731 S L91 NOT RU/ELS
 L100 666 S L99 NOT MXS/CI
 L101 664 S L100 NOT CCS/CI
 L102 70 S L101 AND ?ACET?/CNS
 L103 47 S L102 AND 2/S
 L104 23 S L103 AND 1/N
 L105 1 S L104 AND C10H17NO2S2
 L106 0 S 214554-83-3/CRN

FILE 'HCAPLUS' ENTERED AT 10:34:27 ON 14 MAR 2004
 L107 2 S L105
 L108 943555 S L89,L107
 L109 52269 S L35-L66,L108 AND L34
 L110 4 S L1 AND L109
 L111 52423 S L34 AND (L35-L66,L108 OR ASCORB?)
 L112 52423 S L109,L111
 L113 4 S L1 AND L112
 L114 4 S L110,L113
 L115 2405 S L112 AND (L24 OR L32) (L) (THU OR BAC OR DMA OR PAC OR PKT)/RL
 L116 1860 S L115 AND (L88 OR L105) (L) (THU OR BAC OR DMA OR PAC OR PKT)/R
 L117 1249 S L116 AND (PHARMACEUT? OR PHARMACOL?)/SC,SX
 L118 674 S L117 AND COMPOSITION
 L119 683 S L117 AND (COMBIN? OR MIX? OR SYNERG? OR FORMUL?)
 L120 972 S L118,L119
 L121 761 S L120 AND (PD<=20010214 OR PRD<=20010214 OR AD<=20010214)
 L122 1 S L121 AND (BIOENERG? OR BIO(L) ENERG?)
 L123 5 S L114,L122
 E RATH/PA,CS
 L124 4 S E24-E30
 L125 3 S L124 NOT RATH/TI
 L126 7 S L123,L125
 E ENERGY/CT
 L127 4 S L121 AND ENERGY/CW
 E ENERGY METABOLISM/CT
 E E4+ALL
 L128 7453 S E3,E2
 E E7+ALL
 L129 1653 S E1
 L130 675742 S E3+NT
 L131 199805 S E7+NT
 L132 21 S L121 AND L128-L131
 L133 29 S L126,L127,L132
 L134 22 S L133 NOT L126
 E UREA CYCLE/CT
 E E3+ALL
 L135 627 S E2

L136 1 S L135 AND L121
 E METABOLISM/CT
 E E13+ALL
 L137 19 S E2,E1+NT AND L121
 E METABOLISM/CT
 E E3+ALL
 L138 15 S E1+NT AND L121
 L139 25 S L137,L138
 L140 21 S L139 NOT L133
 SEL DN AN 1 3 12 13 17 18
 L141 6 S E1-E16
 L142 13 S L126,L141
 L143 13 S L142 AND L1-L23,L33-L66,L89,L107-L142
 L144 10 S L143 AND (KREB OR ?SUCCIN? OR ?FUMAR? OR ?MALIC? OR ?MALATE?
 L145 13 S L143,L144

FILE 'HCAPLUS' ENTERED AT 10:59:31 ON 14 MAR 2004

=> d all hitstr tot 1145

L145 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:182238 HCAPLUS
 ED Entered STN: 05 Mar 2004
 TI Metabolic uncoupling therapy
 IN McCleary, Edward Larry
 PA USA
 SO U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 749,584.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM A61K031-7076
 ICS A61K031-685; A61K031-525; A61K031-195; A61K031-198
 NCL 424094100; 514046000; 514251000; 514078000; 514356000; 514393000;
 514561000; 514350000; 514565000; 514250000
 CC 1-12 (Pharmacology)
 Section cross-reference(s): 2, 18

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004043013	A1	20040304	US 2003-462958	20030617 <--
	US 2002132219	A1	20020919	US 2000-749584	20001228 <--
	US 6579866	B2	20030617		
PRAI	US 2000-749584	A2	20001228 <--		

AB A combination of chemical agents reduces reductive stress by limiting the accumulation of high-energy electrons potentially available to the electron transport chain. A method of metabolic uncoupling therapy (MUT) comprises: analyzing a specific physiol. process involving reductive stress; identifying a plurality of MUT agents that modulate metabolic pathways by influencing electron flux; and formulating a combination of MUT agents that limits the accumulation of high-energy electrons potentially available to the electron transport chain.

ST metabolic uncoupling therapy electron transport vitamin

IT Amino acids

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (branched; metabolic uncoupling therapy)

IT Metabolism, animal

 (high-energy electrons in; metabolic uncoupling therapy)

IT Antibiotics

 Electron transport system, biological

 Metabolic pathways

 (metabolic uncoupling therapy)

IT Vitamins
 RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (metabolic uncoupling therapy)

IT Albumins
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (metabolic uncoupling therapy)

IT Phosphatidylcholines
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (metabolic uncoupling therapy)

IT Sphingomyelins
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (metabolic uncoupling therapy)

IT Phenols
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (polyphenols, nonpolymeric; metabolic uncoupling therapy)

IT Drug interactions
 (synergistic; metabolic uncoupling therapy)

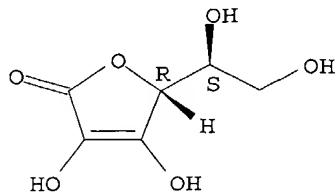
IT 50-69-1, Ribose 50-81-7, vitamin C 50-99-7, Glucose 51-84-3,
 Acetylcholine 54-47-7, Pyridoxal phosphate 56-40-6, Glycine 56-41-7,
 L-Alanine 56-45-1, L-Serine 56-84-8, Aspartic acid 56-85-9,
 Glutamine 57-00-1, Creatine 58-85-5, Biotin 59-30-3 59-43-8
 , vitamin B1 62-49-7, Choline 65-23-6, Pyridoxine 68-19-9, vitamin
 B12 70-51-9 74-79-3, Arginine 79-83-4, vitamin B3
 83-88-5, Riboflavin 87-89-8, (myo)Inositol
 98-92-0, vitamin B3 107-35-7, Taurine 107-43-7,
 Trimethylglycine 127-17-3 144-23-0, Magnesium
 citrate 144-55-8, Carbonic acid monosodium salt 303-98-0,
 coenzyme Q10 541-15-1, Carnitine 541-50-4 563-24-6
 1406-16-2, vitamin D 1406-18-4, vitamin E 3040-38-8, Acetyl-L-
 carnitine) 6829-55-6D, Tocotrienol, analogs 7439-95-4,
 Magnesium 7440-09-7, Potassium 7440-47-3, Chromium 7440-70-2
 , Calcium 7647-14-5, Sodium chloride 7782-49-2, Selenium 8059-24-3,
 vitamin B6 9004-10-8, Insulin 17298-37-2, Propionyl carnitine
 27750-10-3, Hydroxycitric acid 27774-13-6, Vanadyl sulfate
 29908-03-0 32839-18-2 32839-30-8 57828-26-9, Lipoic
 acid 102518-79-6, Huperzine A
 RL: PAC (Pharmacological activity); THU (Therapeutic
 use); BIOL (Biological study); USES (Uses)
 (metabolic uncoupling therapy)

IT 50-81-7, vitamin C 59-43-8, vitamin B1 79-83-4
 , vitamin B3 83-88-5, Riboflavin 98-92-0,
 vitamin B3 127-17-3 144-23-0, Magnesium
 citrate 541-15-1, Carnitine 7439-95-4
 , Magnesium 7440-70-2, Calcium
 RL: PAC (Pharmacological activity); THU (Therapeutic
 use); BIOL (Biological study); USES (Uses)
 (metabolic uncoupling therapy)

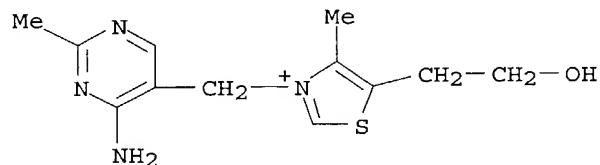
RN 50-81-7 HCPLUS

CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



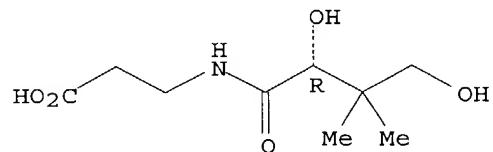
RN 59-43-8 HCAPLUS
 CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methyl- chloride (9CI) (CA INDEX NAME)



● Cl⁻

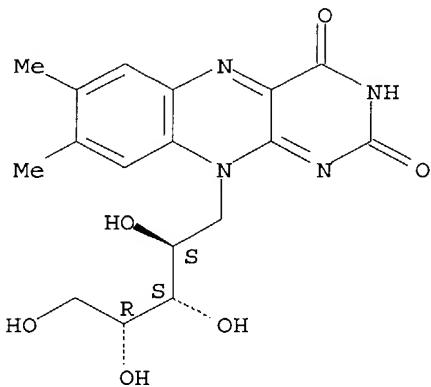
RN 79-83-4 HCAPLUS
 CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

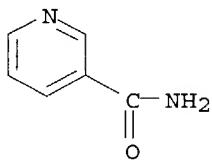


RN 83-88-5 HCAPLUS
 CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

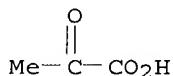
Absolute stereochemistry.



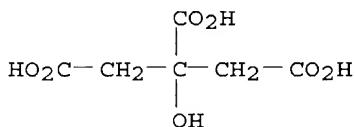
RN 98-92-0 HCAPLUS
 CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 127-17-3 HCAPLUS
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



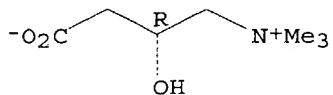
RN 144-23-0 HCAPLUS
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (1:1) (9CI)
 (CA INDEX NAME)



● Mg

RN 541-15-1 HCAPLUS
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

L145 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:173419 HCAPLUS
DN 138:221848
ED Entered STN: 07 Mar 2003
TI Preparation of novel **ascorbic acid lysine**
and proline derivatives
IN Roomi, Waheed; Netke, Shrirang; Ivanov, Vadim; Niedzwiecki, Aleksandra
PA Rath, Matthias, USA
SO PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-34
ICS C07D305-12
CC 34-3 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 33, 62

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003018000	A1	20030306	WO 2002-US27060	20020823
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

US 2003119753 A1 20030626 US 2002-226588 20020823

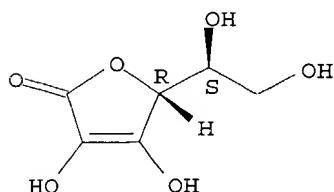
PRAI US 2001-314857P P 20010824

AB L-Ascorbic acid esters with lysine or lysine moieties or proline or proline moieties were prepared for use in compns. used to prevent the degradation of extracellular matrix, stabilize connective tissue, as antioxidants, and for treating damage to skin. Thus, treating 8 mmol L-ascorbic acid with 10 mmol L-lysine in 20 mL sulfuric acid overnight at room temperature afforded L-ascorbyl-6-lysine.

ST ascorbic acid ester lysine proline prep

IT dermatol application
 IT Amino acids, preparation
 RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (ascorbate esters; preparation of novel **ascorbic acid** lysinate or proline derivs.)
 IT Antioxidants
 Connective tissue
 Extracellular matrix
 (preparation of novel **ascorbic acid** lysinate or proline derivs.)
 IT 25213-33-6DP, Poly[(2S)-1,2-pyrrolidinediylcarbonyl], reaction products with 6-deoxybromo **ascorbate** or 6-deoxyamino **ascorbate**
 38000-06-5DP, reaction products with 6-deoxybromo **ascorbate** or 6-deoxyamino **ascorbate** 62983-44-2DP, reaction products with polylysine or polyproline 85366-70-7DP, reaction products with polylysine or polyproline 498576-94-6P 498576-96-8P 500893-69-6P
 500893-70-9P 500893-71-0P 500893-72-1P 500893-73-2P 500893-74-3P
 500893-75-4P 500893-76-5P 500893-77-6DP, reaction products with polylysine 500893-78-7DP, reaction products with polyproline
 500893-79-8P 500893-80-1P 500893-81-2P 500893-82-3P 500893-83-4P
 500893-84-5P 500893-85-6P 500893-86-7P 500893-87-8P 500893-88-9P
 500893-89-0P 500893-90-3P 500893-91-4P 500893-92-5P 500893-93-6P
 500893-94-7P 500893-95-8P 500893-96-9P 500893-97-0P 500893-98-1P
 500893-99-2P 500894-00-8P 500894-02-0P 500894-03-1P 500894-04-2P
 500894-05-3P 500894-06-4P 500903-96-8P 500903-97-9P 500903-98-0P
 500903-99-1P 500904-02-9P 500904-05-2P 500904-06-3P 500904-07-4P
 500904-08-5P 500904-09-6P 500904-10-9P
 RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (preparation of novel **ascorbic acid** lysinate or proline derivs.)
 IT 50-81-7, **Ascorbic acid**, reactions
 56-87-1, L **Lysine**, reactions 147-85-3, L **Proline**, reactions 15042-01-0, 5 6 Isopropylidene **ascorbic acid** 62983-44-2 85366-70-7 175446-63-6 500894-01-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of novel **ascorbic acid** lysinate or proline derivs.)
 RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Khaled; US 5977073 A 1999 HCPLUS
 IT 50-81-7, **Ascorbic acid**, reactions
 56-87-1, L **Lysine**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of novel **ascorbic acid** lysinate or proline derivs.)
 RN 50-81-7 HCPLUS
 CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

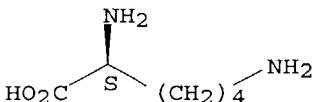
Absolute stereochemistry.



RN 56-87-1 HCPLUS

CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L145 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:169981 HCAPLUS

DN 138:180774

ED Entered STN: 06 Mar 2003

TI Compositions of flavonoids and synergists for use as cytoprotectants and methods of making and using them

IN Brown, Lesley A.; Miller, Guy

PA Galileo Laboratories, Inc., USA

SO U.S., 28 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM A61K007-42

NCL 424059000; 424401000; 514456000; 514045000; 514046000; 514047000;
514048000; 514028000; 536026700; 536027600

CC 1-12 (Pharmacology)

Section cross-reference(s): 63

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI US 6528042	B1	20030304	US 2000-684607	20001006 <--
PRAI US 1999-159003P	P	19991008		

AB Non-naturally-occurring compns. for use in amelioration of disruption of energy metabolism secondary to stress are described. These compns. comprise a flavonoid or derivative thereof and a synergist. Synergists include, but are not limited to, amino acids, carbohydrates, carnitines, flavonoids, nucleosides, and tocopherols and/or derivs. thereof. Methods of making these compns. and methods of ameliorating disruption of energy metabolism secondary to stress, comprising administering such synergistic compns., are also disclosed.

ST flavonoid synergist combination cytoprotectant energy metab stress; amino acid flavonoid combination cytoprotectant energy metab stress; carbohydrate flavonoid combination cytoprotectant energy metab stress; carnitine flavonoid combination cytoprotectant energy metab stress; nucleoside flavonoid combination cytoprotectant energy metab stress; tocopherol flavonoid combination cytoprotectant energy metab stress

IT Animal cell line
(GCL1; flavonoid-synergist combination composition for cytoprotectant)

IT Animal tissue culture
(chemical insult; flavonoid-synergist combination composition for cytoprotectant)

IT Nucleosides, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(derivs.; flavonoid-synergist combination composition for cytoprotectant)

IT Toxicity
(drug, stress from; flavonoid-synergist combination

composition for cytoprotectant)

IT Metabolism
 (energy; flavonoid-**synergist combination**
 composition for cytoprotectant)

IT Aging, animal
 Cytoprotective agents
 Cytotoxicity
 Exercise
 Stress, animal
 (flavonoid-**synergist combination composition**
 for cytoprotectant)

IT Amino acids, biological studies
 Carbohydrates, biological studies
 Flavonoids
 Nucleosides, biological studies
 Tocopherols
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
 (Biological study); USES (Uses)
 (flavonoid-**synergist combination composition**
 for cytoprotectant)

IT Nutrition, animal
 (nutritional **composition**; flavonoid-**synergist**
 combination composition for cytoprotectant)

IT Cell death
 (reduction; flavonoid-**synergist combination**
 composition for cytoprotectant)

IT Chemicals
 (stress from chemical insult; flavonoid-**synergist**
 combination composition for cytoprotectant)

IT Environment
 (stress from environmental alteration; flavonoid-**synergist**
 combination composition for cytoprotectant)

IT Toxins
 RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
 (stress from exposure to; flavonoid-**synergist**
 combination composition for cytoprotectant)

IT Physiology, animal
 (stress from physiol. condition; flavonoid-**synergist**
 combination composition for cytoprotectant)

IT Surgery
 (stress from pre-surgical preparation or post-surgical conditions;
 flavonoid-**synergist combination composition**
 for cytoprotectant)

IT Chemotherapy
 Fever and Hyperthermia
 Hypothermia
 Hypoxia, animal
 Ionizing radiation
 (stress from; flavonoid-**synergist combination**
 composition for cytoprotectant)

IT Drug interactions
 (synergistic; flavonoid-**synergist**
 combination composition for cytoprotectant)

IT 56-40-6, Glycine, biological studies 56-41-7, L-Alanine, biological
 studies 58-61-7, Adenosine, biological studies 58-63-9, Inosine
 59-02-9, α -Tocopherol 59-23-4, Galactose, biological studies
 117-39-5, Quercetin 119-13-1, (+)- δ -Tocopherol 127-17-3,
 biological studies 153-18-4, Rutin 480-40-0, Chrysin 486-66-8,
 Daidzein 488-69-7, Fructose-1,6-bisphosphate 491-70-3, Luteolin
 491-80-5, Biochanin A 520-26-3, Hesperidin 520-27-4, Diosmin
 520-33-2, Hesperetin 541-15-1, Carnitine
 541-15-1D, Carnitine, derivs. 616-91-1,
 N-Acetylcysteine 3040-38-8, Acetylcarnitine 5556-48-9, Ribulose

7616-22-0, γ -Tocopherol 20762-30-5, ADP-ribose 35054-79-6,
 Hydroxybutyric acid 36687-82-8, biological studies
 RL: PAC (Pharmacological activity); THU (Therapeutic
 use); BIOL (Biological study); USES (Uses)
 (flavonoid-synergist combination composition
 for cytoprotectant)

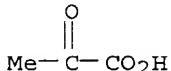
RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD
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IT 127-17-3, biological studies 541-15-1, Carnitine

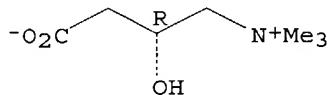
541-15-1D, Carnitine, derivs.
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (flavonoid-synergist combination composition
 for cytoprotectant)

RN 127-17-3 HCPLUS
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



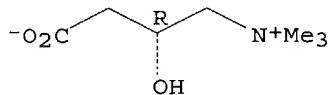
RN 541-15-1 HCPLUS
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 541-15-1 HCPLUS
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L145 ANSWER 4 OF 13 HCPLUS COPYRIGHT 2004 ACS on STN

AN 2003:5244 HCPLUS

DN 138:49962

ED Entered STN: 03 Jan 2003

TI Composition and method for prevention and treatment of health
 conditions caused by constriction of smooth muscle cells

IN Rath, Matthias

PA USA

SO U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM A61K033-06

ICS A61K031-375; A61K031-198

NCL 424682000; 514474000; 514565000

CC 1-12 (Pharmacology)

Section cross-reference(s): 63

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI US 2003003162	A1	20030102	US 2001-885347	20010619
US 6686340	B2	20040203		

PRAI US 2001-885347 20010619

AB The invention relates to a method of administering to a human subject a

composition comprising a vitamin, an amino acid and a trace element for the prevention and treatment of health conditions caused by constriction of smooth muscle cells in organs of the human body like high blood pressure, asthma, glaucoma and tinnitus. The **composition** comprises a vitamin such as **ascorbic acid**, an amino acid such as arginine, and a trace element such as magnesium.

ST smooth muscle constriction disorder vitamin amino acid trace element; asthma tinnitus hypertension vitamin amino acid trace element therapy

IT Heart, disease
(angina pectoris; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Flavonoids
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(citrus; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Asthma
Glaucoma (disease)
Human
Hypertension
Muscle contraction
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Amino acids, biological studies
Carotenes, biological studies
Trace elements, biological studies
Vitamins
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Fertility
(disorder; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Sexual behavior
(impotence; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
(infusions; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
(inhalants; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
(injections; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Lung, disease
(obstructive; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Ovarian cycle
(premenstrual syndrome; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Muscle
(smooth; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Muscle, disease
(spasm, of ureter, urethra, stomach, gall duct; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
(suppositories; **composition** and method for prevention and

treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
 (tablets; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Ear, disease
 (tinnitus; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Tocopherols
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (β , γ , δ mix; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT 7439-96-5D, Manganese, chelates 7440-09-7D, Potassium, chelates
 RL: PAC (Pharmacological activity); BIOL (Biological study)
 (**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT 50-81-7, L-Ascorbic acid, biological studies
 52-90-4, L-Cysteine, biological studies 56-40-6D, Glycine, chromium complexes 56-40-6D, Glycine, molybdenum complexes
 56-87-1, L-Lysine, biological studies 58-85-5, Biotin
 59-02-9, D- α -Tocopherol 59-30-3, Folic Acid, biological studies
 59-43-8, Thiamine, biological studies 59-67-6,
 Niacin, biological studies 65-23-6, Pyridoxine 67-97-0,
 Cholecalciferol 68-19-9, Cyanocobalamin 74-79-3, Arginine, biological studies 83-88-5, Riboflavin, biological studies
 87-89-8, Inositol 98-92-0, Niacinamide 127-40-2,
 Lutein 137-08-6 137-66-6, Ascorbyl Palmitate
 144-23-0, Magnesium Citrate 147-85-3, L-Proline,
 biological studies 303-98-0, Coenzyme Q10 432-70-2, α -Carotene
 472-70-8, Kryptoxanthin 541-15-1, L-Carnitine
 3211-76-5, L-Selenomethionine 5743-27-1, Calcium
Ascorbate 7235-40-7, β -Carotene 7439-95-4,
 Magnesium, biological studies 7439-98-7D, Molybdenum,
 complexes with glycine 7440-47-3D, Chromium, complexes with glycine
 7693-13-2, Calcium Citrate 7757-93-9, Dicalcium
 Phosphate 13479-54-4, Copper Glycinate 14281-83-5, Zinc Glycinate
 14783-68-7 15431-40-0, Magnesium **Ascorbate**
 15595-35-4, Arginine hydrochloride 35947-07-0, Calcium Glycinate
 72746-33-9, ζ -Carotene 174882-69-0, Pycnogenol
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT 7439-96-5D, Manganese, chelates
 RL: PAC (Pharmacological activity); BIOL (Biological study)
 (**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

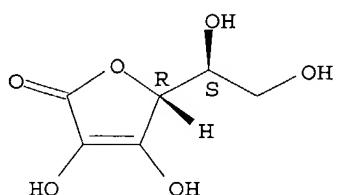
IT 50-81-7, L-Ascorbic acid, biological studies
 56-87-1, L-Lysine, biological studies 59-43-8,
 Thiamine, biological studies 59-67-6, Niacin, biological studies 83-88-5, Riboflavin, biological studies
 98-92-0, Niacinamide 137-08-6 144-23-0
 , Magnesium Citrate 541-15-1, L-Carnitine
 5743-27-1, Calcium Ascorbate 7439-95-4,

Magnesium, biological studies 7439-98-7D, Molybdenum, complexes with glycine 7693-13-2, Calcium Citrate 15431-40-0, Magnesium Ascorbate
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (composition and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

RN 50-81-7 HCPLUS

CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

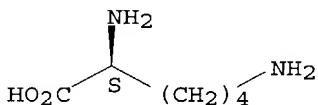
Absolute stereochemistry.



RN 56-87-1 HCPLUS

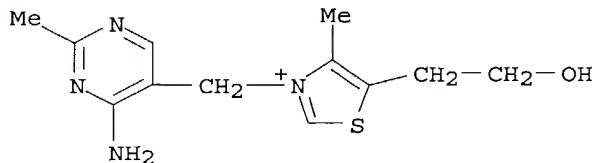
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 59-43-8 HCPLUS

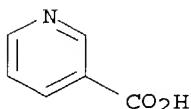
CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methyl- chloride (9CI) (CA INDEX NAME)



● Cl-

RN 59-67-6 HCPLUS

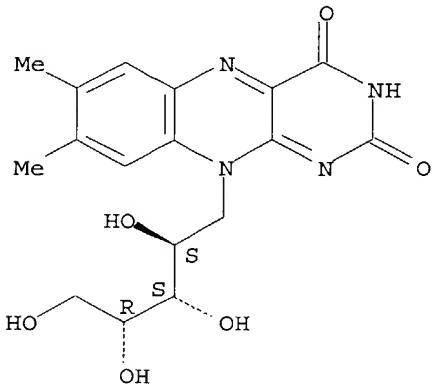
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)



RN 83-88-5 HCPLUS

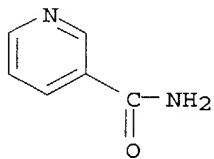
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 98-92-0 HCAPLUS

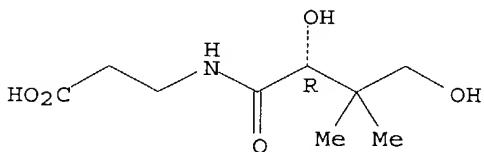
CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 137-08-6 HCAPLUS

CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]-, calcium salt (2:1) (9CI) (CA INDEX NAME)

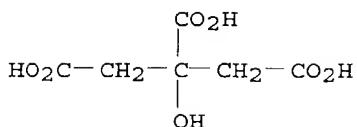
Absolute stereochemistry. Rotation (+).



● 1/2 Ca

RN 144-23-0 HCAPLUS

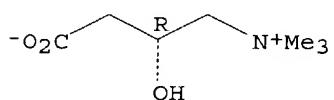
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (1:1) (9CI) (CA INDEX NAME)



● Mg

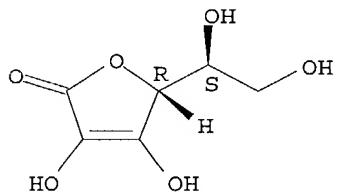
RN 541-15-1 HCAPLUS
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 5743-27-1 HCAPLUS
 CN L-Ascorbic acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 1/2 Ca

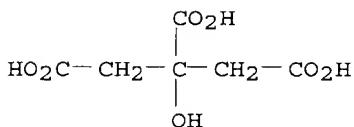
RN 7439-95-4 HCAPLUS
 CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7439-98-7 HCAPLUS
 CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

Mo

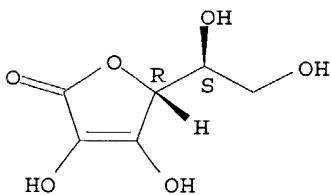
RN 7693-13-2 HCAPLUS
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, calcium salt (9CI) (CA INDEX NAME)



●x Ca

RN 15431-40-0 HCPLUS
 CN L-Ascorbic acid, magnesium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 1/2 Mg

L145 ANSWER 5 OF 13 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:637513 HCPLUS
 DN 137:190730
 ED Entered STN: 23 Aug 2002
 TI Compositions of therapeutic biochemical compounds involved in bioenergy metabolism of cells
 PA Rath, Matthias, Neth.
 SO PCT Int. Appl., 16 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM A61K031-194
 ICS A61K031-122; A61K038-41; A61K031-198
 CC 63-6 (Pharmaceuticals)
 Section cross-reference(s): 1, 66

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002064129	A2	20020822	WO 2002-EP1545	20020214 <--
	WO 2002064129	A3	20030508		
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	RW:	AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR			
	US 2002173546	A1	20021121	US 2002-77283	20020214 <--
	BR 2002003902	A	20030128	BR 2002-3902	20020214 <--
	EP 1368017	A2	20031210	EP 2002-719835	20020214 <--
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, TR			
	NO 2002004536	A	20020920	NO 2002-4536	20020920 <--
PRAI	US 2001-268825P	P	20010214	<--	

AB WO 2002-EP1545 W 20020214

AB A composition of biochem. compds. involved in **bioenergy** metabolism of cells and a method of use in prevention and therapy of diseases are disclosed. The composition may contain 2 or more of the following biochem. substances, e.g., **succinate, fumarate, L-malate, α-ketoglutarate**, irresp. of their amts. for the improvement of cellular energy metabolism These compds. may be administered at 0.001-100,000 mg.

ST **bioenergy** metab cell biochem therapeutic

IT **Energy metabolism, animal**

Human

Tricarboxylic acid cycle

Urea cycle

 (compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Drug delivery systems

 (infusions; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Drug delivery systems

 (inhalants; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Drug delivery systems

 (injections; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Ubiquinones

 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (reduced; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Drug delivery systems

 (suppositories; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

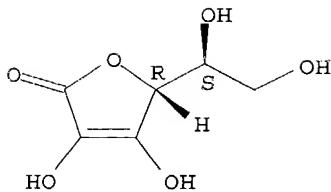
IT Drug delivery systems

 (tablets; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT 50-81-7, Ascorbic acid, biological studies
 53-57-6 53-59-8, Nicotinamide-Adenine
 Dinucleotide Phosphate 53-84-9,
 Nicotinamide-Adenine Dinucleotide
 56-65-5, Adenosine Triphosphate, biological
 studies 56-84-8, L-Aspartic acid, biological studies 56-87-1,
 Lysine, biological studies 58-64-0, Adenosine
 Diphosphate, biological studies 58-68-4, Reduced
 Nicotinamide Adenine Dinucleotide
 59-43-8, Thiamine, biological studies 59-67-6,
 Nicotinic Acid, biological studies 70-26-8, Ornithine
 72-89-9, Acetyl-Coenzyme A
 74-79-3, Arginine, biological studies 77-92-9, Citric
 acid, biological studies 79-83-4, Pantothenic
 acid 83-88-5, Riboflavin, biological studies
 86-01-1, Guanosine Triphosphate
 89-00-9, 2,3-Pyridinedicarboxylic acid 97-67-6,
 L-Malic acid 98-92-0,
 Niacinamide 110-15-6, Succinic acid,
 biological studies 110-17-8, Fumaric acid,
 biological studies 127-17-3, Pyruvic acid,
 biological studies 146-14-5, Flavin-Adenine
 Dinucleotide 146-17-8, Flavin Mononucleotide
 146-91-8, Guanosine Diphosphate 303-98-0,
 Coenzyme Q-10 320-77-4, Isocitric acid
 328-42-7, Oxalacetic acid 328-50-7,
 α-Ketoglutaric acid 372-75-8,
 Citrulline 541-15-1, Carnitine 585-84-2,
 cis-Aconitic acid 604-98-8,

Succinyl-Coenzyme A 940-69-2,
Lipoamide 1077-28-7, 1,2-Dithiolane-3-pentanoic acid
1948-82-9, Oxalosuccinic acid 2387-71-5
5666-16-0, Reduced Flavin
Mononucleotide 7439-95-4, Magnesium, biological studies
7439-96-5, Manganese, biological studies 7439-98-7,
Molybdenum, biological studies 7440-50-8, Copper, biological
studies 7440-70-2, Calcium, biological studies
10124-49-9, Iron-Sulfate 14875-96-8, Heme b 26598-29-8, Heme c
57560-10-8, Heme a 59890-88-9
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compns. of therapeutic biochem. compds. involved in
bioenergy metabolism of cells)
IT 50-81-7, Ascorbic acid, biological studies
53-57-6 53-59-8, Nicotinamide-Adenine
Dinucleotide Phosphate 53-84-9,
Nicotinamide-Adenine Dinucleotide
56-65-5, Adenosine Triphosphate, biological
studies 56-87-1, Lysine, biological studies
58-64-0, Adenosine Diphosphate, biological
studies 58-68-4, Reduced Nicotinamide
Adenine Dinucleotide 59-43-8, Thiamine
 $, \text{ biological studies } 59-67-6, \text{ Nicotinic Acid}$
 $, \text{ biological studies } 72-89-9, \text{ Acetyl-Coenzyme}$
A 77-92-9, Citric acid, biological
studies 79-83-4, Pantothenic acid
83-88-5, Riboflavin, biological studies 86-01-1
 $, \text{ Guanosine Triphosphate } 89-00-9,$
2,3-Pyridinedicarboxylic acid 97-67-6, L-Malic
acid 98-92-0, Niacinamide 110-15-6,
Succinic acid, biological studies 110-17-8,
Fumaric acid, biological studies 127-17-3,
Pyruvic acid, biological studies 146-14-5,
Flavin-Adenine Dinucleotide 146-17-8
 $, \text{ Flavin Mononucleotide } 146-91-8, \text{ Guanosine}$
Diphosphate 320-77-4, Isocitric acid
328-42-7, Oxalacetic acid 328-50-7,
 $\alpha\text{-Ketoglutaric acid } 541-15-1,$
Carnitine 585-84-2, cis-Aconitic
acid 604-98-8, Succinyl-Coenzyme
A 940-69-2, Lipoamide 1948-82-9,
Oxalosuccinic acid 5666-16-0, Reduced
Flavin Mononucleotide 7439-95-4, Magnesium,
biological studies 7439-96-5, Manganese, biological studies
7439-98-7, Molybdenum, biological studies
7440-70-2, Calcium, biological studies 10124-49-9,
Iron-Sulfate
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compns. of therapeutic biochem. compds. involved in
bioenergy metabolism of cells)
RN 50-81-7 HCPLUS
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

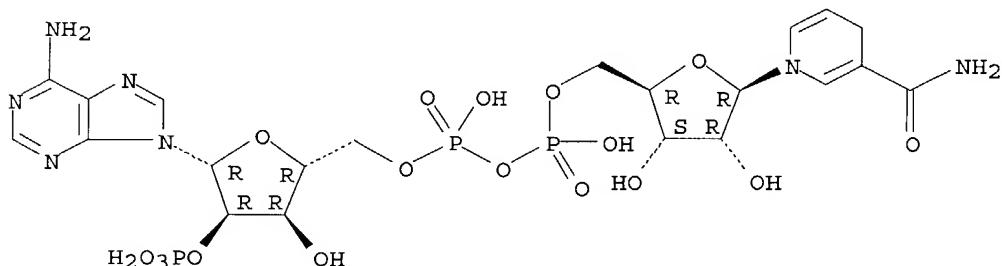
Absolute stereochemistry.



RN 53-57-6 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate), 2'-(dihydrogen phosphate), P'→5'-ester with 1,4-dihydro-1-β-D-ribofuranosyl-3-pyridinecarboxamide (9CI) (CA INDEX NAME)

Absolute stereochemistry.

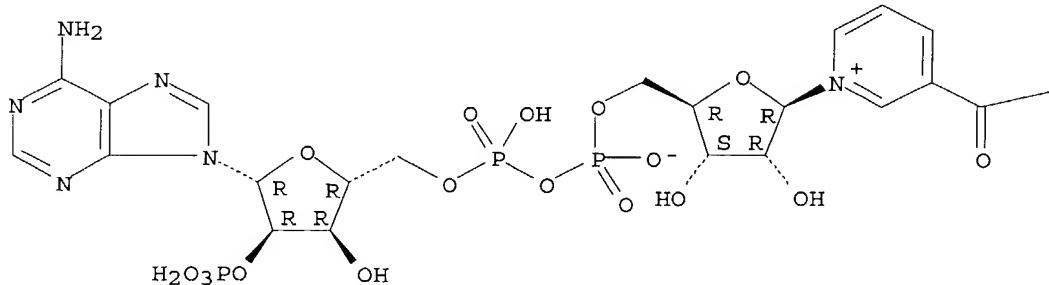


RN 53-59-8 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate), 2'-(dihydrogen phosphate), P'→5'-ester with 3-(aminocarbonyl)-1-β-D-ribofuranosylpyridinium, inner salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



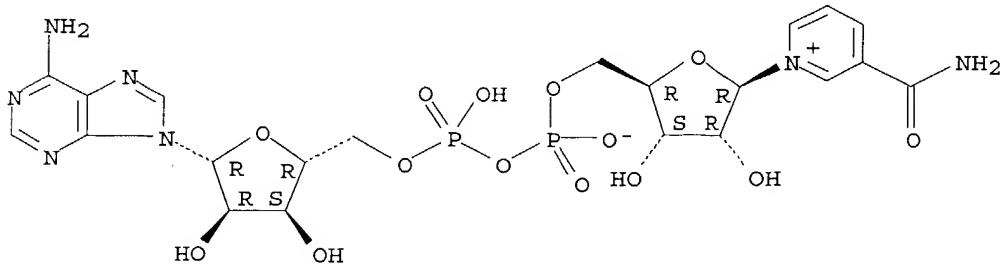
PAGE 1-B

—NH₂

RN 53-84-9 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate), P' \rightarrow 5'-ester with
3-(aminocarbonyl)-1- β -D-ribofuranosylpyridinium, inner salt (9CI)
(CA INDEX NAME)

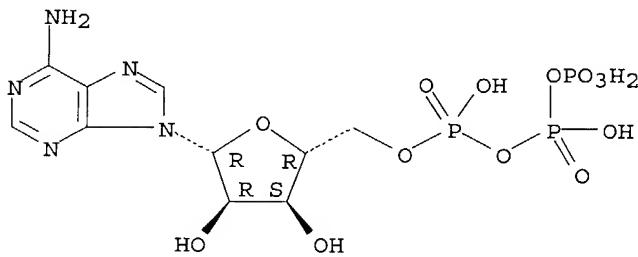
Absolute stereochemistry.



RN 56-65-5 HCPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

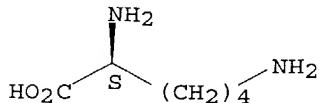
Absolute stereochemistry.



RN 56-87-1 HCPLUS

CN L-Lysine (9CI) (CA INDEX NAME)

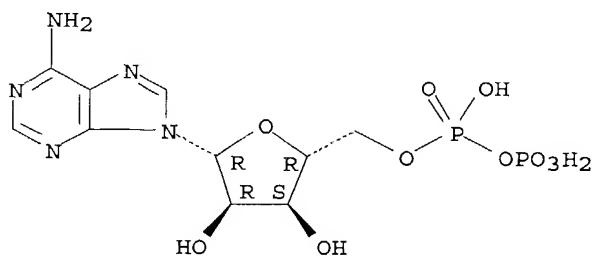
Absolute stereochemistry.



RN 58-64-0 HCPLUS

CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

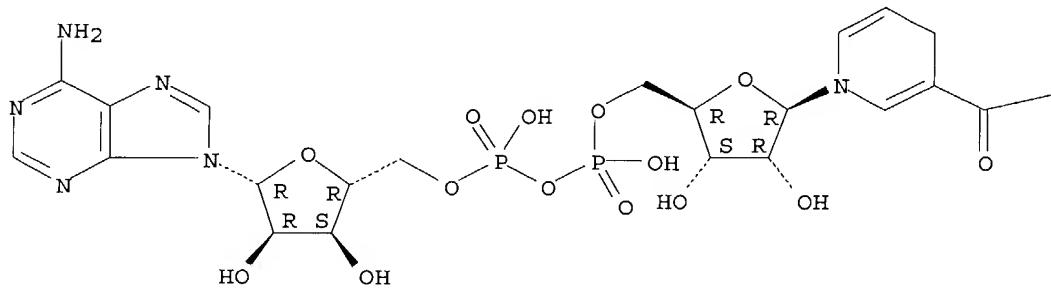


RN 58-68-4 HCPLUS

CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with
1,4-dihydro-1-β-D-ribofuranosyl-3-pyridinecarboxamide (9CI) (CA
INDEX NAME)

Absolute stereochemistry.

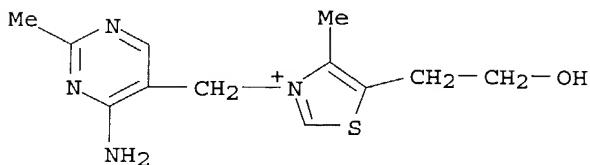
PAGE 1-A



PAGE 1-B

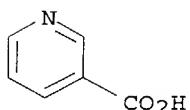
—NH₂

RN 59-43-8 HCPLUS

CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-
4-methyl- chloride (9CI) (CA INDEX NAME)● Cl⁻

RN 59-67-6 HCPLUS

CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)

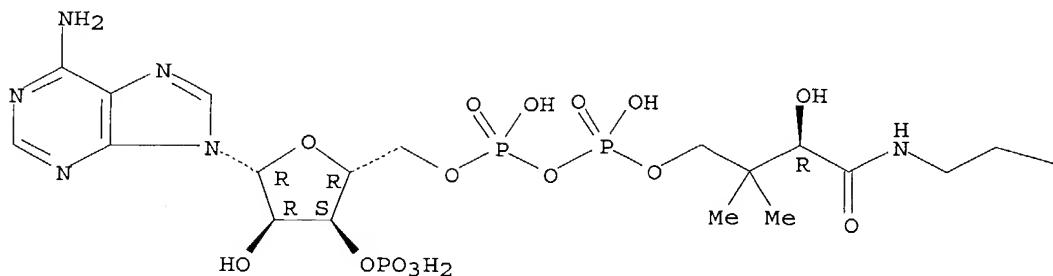


RN 72-89-9 HCPLUS

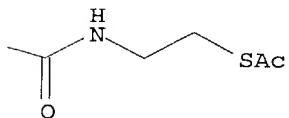
CN Coenzyme A, S-acetate (6CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

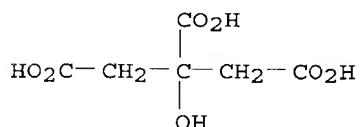
PAGE 1-A



PAGE 1-B

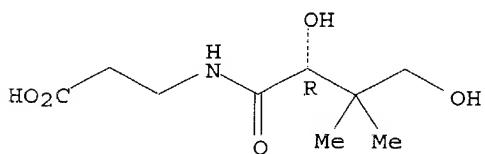


RN 77-92-9 HCPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (9CI) (CA INDEX NAME)



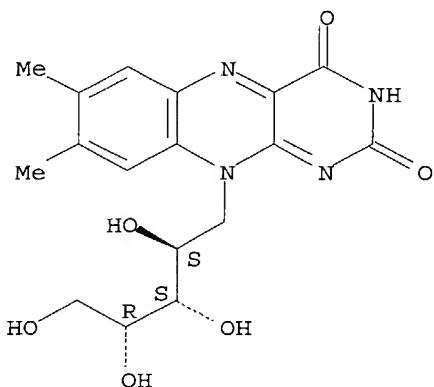
RN 79-83-4 HCPLUS
CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 83-88-5 HCPLUS
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

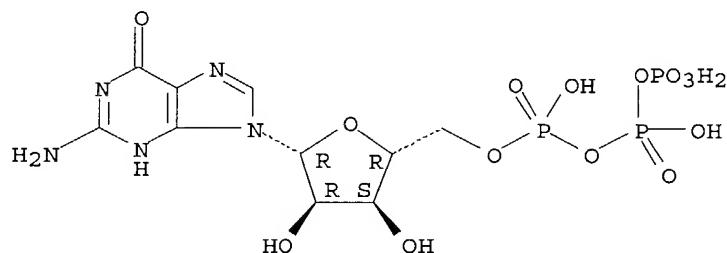
Absolute stereochemistry.



RN 86-01-1 HCPLUS

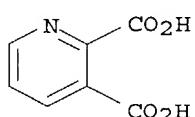
CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 89-00-9 HCPLUS

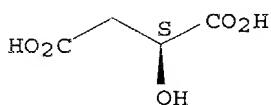
CN 2,3-Pyridinedicarboxylic acid (8CI, 9CI) (CA INDEX NAME)



RN 97-67-6 HCPLUS

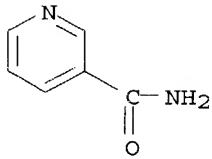
CN Butanedioic acid, hydroxy-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

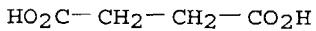


RN 98-92-0 HCPLUS

CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)

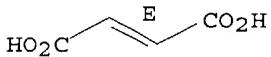


RN 110-15-6 HCAPLUS
 CN Butanedioic acid (9CI) (CA INDEX NAME)

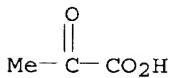


RN 110-17-8 HCAPLUS
 CN 2-Butenedioic acid (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

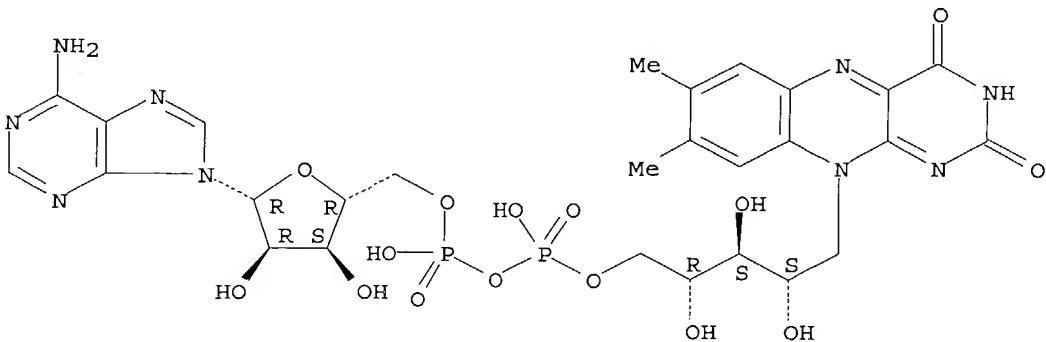


RN 127-17-3 HCAPLUS
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



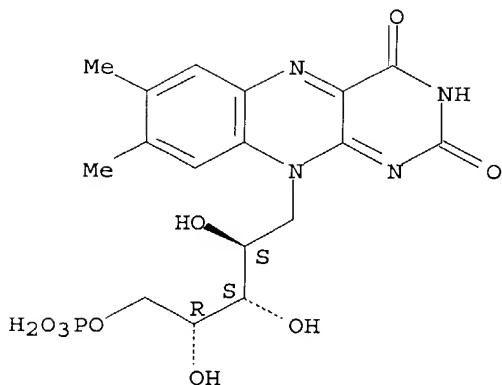
RN 146-14-5 HCAPLUS
 CN Riboflavin 5'- (trihydrogen diphosphate), P'→5'-ester with adenosine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 146-17-8 HCAPLUS
 CN Riboflavin 5'- (dihydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

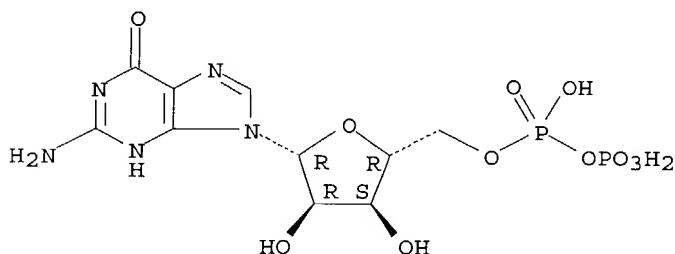
Absolute stereochemistry.



RN 146-91-8 HCAPLUS

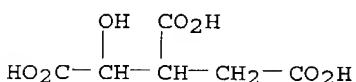
CN Guanosine 5'- (trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



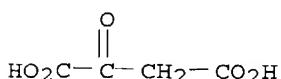
RN 320-77-4 HCAPLUS

CN Pentaric acid, 3-carboxy-2,3-dideoxy- (9CI) (CA INDEX NAME)



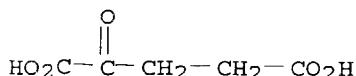
RN 328-42-7 HCAPLUS

CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)



RN 328-50-7 HCAPLUS

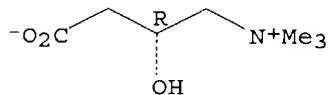
CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS

CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
(9CI) (CA INDEX NAME)

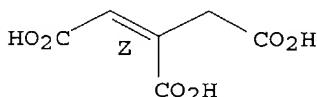
Absolute stereochemistry. Rotation (-).



RN 585-84-2 HCPLUS

CN 1-Propene-1,2,3-tricarboxylic acid, (1Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

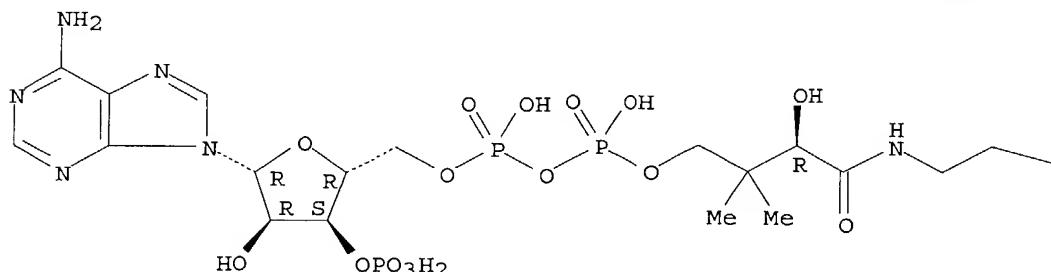


RN 604-98-8 HCPLUS

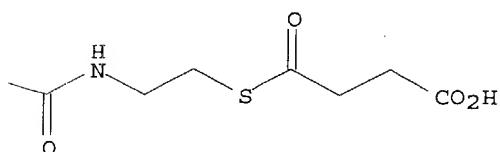
CN Coenzyme A, S-(hydrogen butanedioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

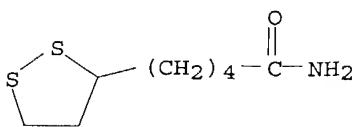


PAGE 1-B



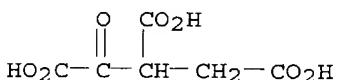
RN 940-69-2 HCPLUS

CN 1,2-Dithiolane-3-pentanamide (9CI) (CA INDEX NAME)



RN 1948-82-9 HCAPLUS

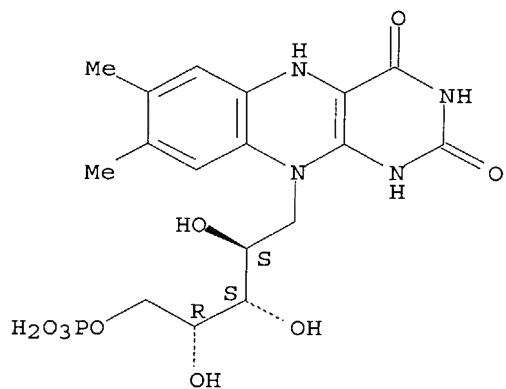
CN 1,2,3-Propanetricarboxylic acid, 1-oxo- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 5666-16-0 HCAPLUS

CN Riboflavin 5'-(dihydrogen phosphate), 1,5-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 7439-95-4 HCAPLUS

CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7439-98-7 HCAPLUS

CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

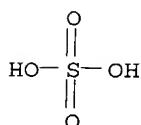
Mo

RN 7440-70-2 HCAPLUS

CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

RN 10124-49-9 HCPLUS
 CN Sulfuric acid, iron salt (8CI, 9CI) (CA INDEX NAME)



●x Fe(x)

L145 ANSWER 6 OF 13 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:552171 HCPLUS
 DN 137:99036
 ED Entered STN: 25 Jul 2002
 TI Synergistic compositions containing **ascorbate** and **lysine**
 for the treatment of extracellular matrix degeneration
 PA Rath, Matthias, Neth.
 SO Ger. Offen., 10 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM A61K031-375
 ICS A61K031-198
 CC 63-6 (Pharmaceuticals)
 Section cross-reference(s): 1
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10101522	A1	20020725	DE 2001-10101522	20010115
PRAI	DE 2001-10101522		20010115		

AB The invention concerns synergistic pharmaceutical compns. that contain **ascorbate** and fibrinolysis/collagenase inhibitors from the group of **lysine** and its analogs for the prevention and treatment of extracellular matrix degeneration. The compns. further contain antioxidants. Thus typical oral compns. contain (mg/kgBw/d) and (IU/kgBw/d) resp.: **ascorbate** 5-500; EACA 1-1500; tranexamic acid 1-500; p-aminomethyl benzoic acid 1-500; **lysine** 1-1500; proline 1-1500; n-acetyl cysteine 0.1-5000; carotene 0.1-10 000; tocopherol 0.1-500.

ST synergism drug **ascorbate** **lysine** extracellular matrix degeneration

IT Extracellular matrix
 (degeneration; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Drug delivery systems
 (oral; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Drug delivery systems
 (parenterals; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Fibrinolysis
 (prevention of; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Cooperative phenomena
 (synergism; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Atherosclerosis
 Neoplasm
 (synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Tocopherols
 Trace elements, biological studies
 Vitamins
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT 9001-12-1, Collagenase
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (inhibitors; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT 50-81-7, Ascorbic acid, biological studies
 56-87-1, L-Lysine, biological studies 56-91-7,
 p-Aminomethyl benzoic acid 60-32-2, EACA 147-85-3, L-Proline,
 biological studies 616-91-1, L-Cysteine, N-acetyl- 701-54-2,
 Cyclohexanecarboxylic acid, 4-(aminomethyl)- 1197-18-8, Tranexamic acid
 2393-24-0, p-Benzylamine sulfonic acid 6072-02-2, L-Lysine,
 N2-acetyl-, methyl ester 7782-49-2, Selenium, biological studies
 23288-49-5, Probucol 24306-54-5, 4-Aminomethyl-bicyclo-2,2,2-octane-1-carboxylic acid
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

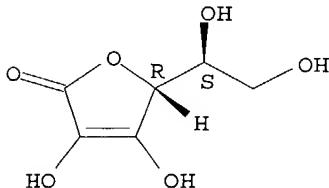
RE

(1) Anon; DE 4243363 A1 HCAPLUS
 (2) Anon; JP 4243825 A
 (3) Anon; US 5639787 A HCAPLUS
 (4) Anon; JP 62048622 A HCAPLUS
 (5) Anon; JP 6256184 A
 (6) Anon; JARC Sci Publ 1982, V41, P665

IT 50-81-7, Ascorbic acid, biological studies
 56-87-1, L-Lysine, biological studies
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

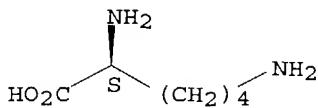
RN 50-81-7 HCAPLUS
 CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 56-87-1 HCAPLUS
 CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L145 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:272794 HCAPLUS

DN 136:299725

ED Entered STN: 12 Apr 2002

TI Therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer

IN Rath, Matthias

PA Neth.

SO Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM A61K031-195

ICS A61K031-375; A61P035-00

ICI A61K031-195, A61K031-375

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 1

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1195159	A1	20020410	EP 2000-121950	20001009 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRAI EP 2000-121950 20001009 <--

AB A therapeutic composition for the prevention and treatment of different forms of cancer in very elevated dosages of ascorbic acid and salts, L-Lysine and L-proline, vitamins and trace elements.

ST therapeutic combination ascorbate lysine
antitumor; arginine ascorbate antitumor therapeutic combination

IT Flavonoids

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(biflavonoids; therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer)

IT Uterus, neoplasm

(cervix, inhibitors; therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer)

IT Antitumor agents

(cervix; therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer)

IT Intestine, neoplasm

(duodenum, inhibitors; therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer)

IT Antitumor agents

(duodenum; therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer)

IT Antitumor agents

(esophagus; therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer)

cancer)
IT Drug delivery systems
(inhalants; therapeutic combination of **ascorbate**
with **lysine** or arginine for prevention and treatment of
cancer)
IT Lung, neoplasm
Ovary, neoplasm
Skin, neoplasm
Stomach, neoplasm
Testis, neoplasm
(inhibitors; therapeutic combination of **ascorbate**
with **lysine** or arginine for prevention and treatment of
cancer)
IT Drug delivery systems
(injections; therapeutic combination of **ascorbate**
with **lysine** or arginine for prevention and treatment of
cancer)
IT Antitumor agents
(lung; therapeutic combination of **ascorbate** with
lysine or arginine for prevention and treatment of cancer)
IT Antitumor agents
(mammary gland; therapeutic combination of **ascorbate**
with **lysine** or arginine for prevention and treatment of
cancer)
IT Antitumor agents
(melanoma; therapeutic combination of **ascorbate**
with **lysine** or arginine for prevention and treatment of
cancer)
IT Esophagus
Mammary gland
(neoplasm, inhibitors; therapeutic combination of
ascorbate with **lysine** or arginine for prevention and
treatment of cancer)
IT Antitumor agents
(ovary; therapeutic combination of **ascorbate** with
lysine or arginine for prevention and treatment of cancer)
IT Antitumor agents
(skin; therapeutic combination of **ascorbate** with
lysine or arginine for prevention and treatment of cancer)
IT Antitumor agents
(small intestine; therapeutic combination of
ascorbate with **lysine** or arginine for prevention and
treatment of cancer)
IT Intestine, neoplasm
(small, inhibitors; therapeutic combination of
ascorbate with **lysine** or arginine for prevention and
treatment of cancer)
IT Antitumor agents
(stomach; therapeutic combination of **ascorbate** with
lysine or arginine for prevention and treatment of cancer)
IT Drug delivery systems
(suppositories; therapeutic combination of **ascorbate**
with **lysine** or arginine for prevention and treatment of
cancer)
IT Drug delivery systems
(tablets; therapeutic combination of **ascorbate** with
lysine or arginine for prevention and treatment of cancer)
IT Antitumor agents
(testis; therapeutic combination of **ascorbate** with
lysine or arginine for prevention and treatment of cancer)
IT Carotenes, biological studies
Trace elements, biological studies
Vitamins

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer)

IT 50-81-7, Ascorbic acid, biological studies
 56-40-6D, Glycine, chromium and molybdenum complexes
 56-87-1, L-Lysine, biological studies 58-56-0,
 Pyridoxine hydrochloride 58-85-5, Biotin 59-02-9, D-. α .-Tocopherol 59-30-3, Folic acid, biological studies 59-67-6,
 Niacin, biological studies 67-03-8, Thiamine hydrochloride 67-97-0, Cholecalciferol 68-19-9, Cyanocobalamin 83-88-5,
 Riboflavin, biological studies 87-89-8, Inositol 98-92-0
 , Niacinamide 119-13-1, δ -Tocopherol 127-40-2, Lutein 137-08-6 137-66-6, Ascorbyl Palmitate 147-85-3,
 L-Proline, biological studies 148-03-8, β -Tocopherol 303-98-0,
 Coenzyme Q10 432-70-2, α -Carotene 472-70-8, Kryptoxanthin 541-15-1, L-Carnitine 657-27-2, L-Lysine hydrochloride 1119-34-2, L-Arginine hydrochloride 3211-76-5, L-Selenomethionine 5743-27-1, Calcium Ascorbate 7048-04-6, L-Cysteine hydrochloride monohydrate 7235-40-7, β -Carotene 7439-96-5D, Manganese, chelates 7439-98-7D, Molybdenum, glycinate complexes 7440-09-7,
 Potassium, biological studies 7440-47-3D, Chromium, glycinate complexes 7616-22-0, γ -Tocopherol 7693-13-2, Calcium citrate 7757-93-9, Dicalcium Phosphate 7779-25-1, Magnesium citrate 13479-54-4, Copper glycinate 14281-83-5, Zinc glycinate 14451-00-4, Iron fumarate 14783-68-7
 15431-40-0, Magnesium Ascorbate 35947-07-0, Calcium glycinate 174882-69-0, Pycnogenol
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

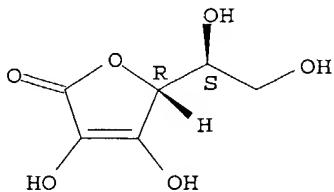
- (1) Bio Nutritional Health Service; GB 2268871 A 1994 HCAPLUS
- (2) Bostom, A; PHARMACOTHERAPY 1995, V15(4), P458 MEDLINE
- (3) Dioguardi, F; US 5198465 A 1993 HCAPLUS
- (4) Dzau, V; US 5891459 A 1999 HCAPLUS
- (5) Health Now Inc; EP 0891771 A 1999 HCAPLUS
- (6) Katz, E; JOURNAL OF ORTHOMOLECULAR MEDICINE 1996, V11/3, P173
- (7) Novo Med Ag; DE 3440090 A 1986 HCAPLUS
- (8) Otsuka Pharma Co Ltd; GB 2029220 A 1980 HCAPLUS
- (9) Paul, S; US 5626883 A 1997 HCAPLUS
- (10) Rath, M; US 5278189 A 1994 HCAPLUS
- (11) Rath, M; US 5650418 A 1997 HCAPLUS

IT 50-81-7, Ascorbic acid, biological studies
 56-87-1, L-Lysine, biological studies 59-67-6,
 Niacin, biological studies 83-88-5, Riboflavin, biological studies 98-92-0, Niacinamide
 137-08-6 541-15-1, L-Carnitine 657-27-2, L-Lysine hydrochloride 5743-27-1, Calcium Ascorbate 7439-96-5D, Manganese, chelates 7439-98-7D, Molybdenum, glycinate complexes 7693-13-2, Calcium citrate 7779-25-1, Magnesium citrate 14451-00-4, Iron fumarate 15431-40-0, Magnesium Ascorbate

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (therapeutic combination of ascorbate with lysine or arginine for prevention and treatment of cancer)

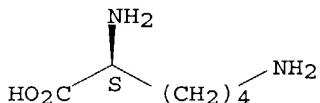
RN 50-81-7 HCAPLUS
 CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

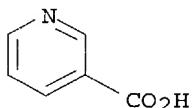


RN 56-87-1 HCAPLUS
 CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.

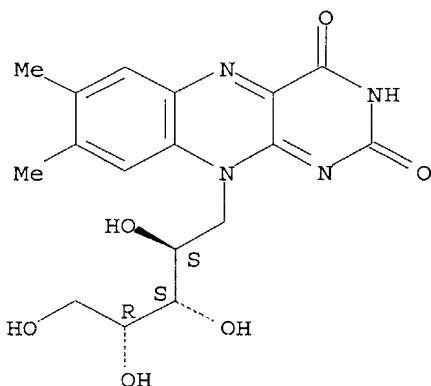


RN 59-67-6 HCAPLUS
 CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)

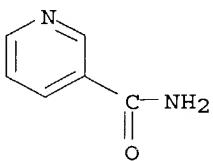


RN 83-88-5 HCAPLUS
 CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



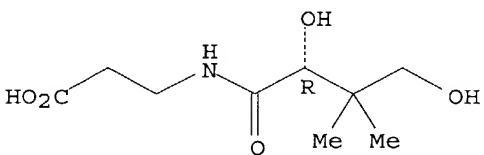
RN 98-92-0 HCAPLUS
 CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 137-08-6 HCPLUS

CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]-, calcium salt (2:1) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

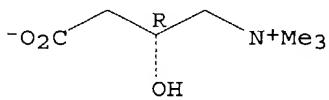


● 1/2 Ca

RN 541-15-1 HCPLUS

CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)- (9CI) (CA INDEX NAME)

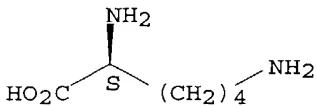
Absolute stereochemistry. Rotation (-).



RN 657-27-2 HCPLUS

CN L-Lysine, monohydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.

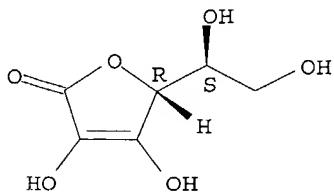


● HCl

RN 5743-27-1 HCPLUS

CN L-Ascorbic acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 1/2 Ca

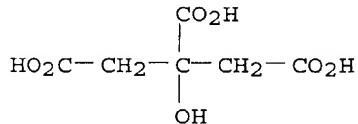
RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7439-98-7 HCAPLUS
 CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

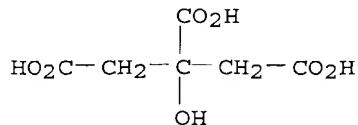
Mo

RN 7693-13-2 HCAPLUS
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, calcium salt (9CI) (CA INDEX NAME)



● x Ca

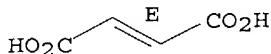
RN 7779-25-1 HCAPLUS
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (9CI) (CA INDEX NAME)



● x Mg

RN 14451-00-4 HCAPLUS
 CN 2-Butenedioic acid (2E)-, iron salt (9CI) (CA INDEX NAME)

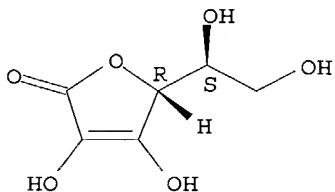
Double bond geometry as shown.



● x Fe(x)

RN 15431-40-0 HCPLUS
 CN L-Ascorbic acid, magnesium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 1/2 Mg

L145 ANSWER 8 OF 13 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:918845 HCPLUS
 DN 136:42851
 ED Entered STN: 21 Dec 2001
 TI Composition for the prevention of smooth muscle diseases comprising ascorbate, arginine and magnesium
 IN Rath, Matthias
 PA Neth.
 SO Eur. Pat. Appl., 13 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM A61K031-195
 ICS A61K031-375; A61K033-14; A61P009-00; A61P011-00; A61P027-00
 ICI A61K031-195, A61K031-375
 CC 63-6 (Pharmaceuticals)

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1163904	A1	20011219	EP 2000-112811	20000616 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	BR 2001003256	A	20020312	BR 2001-3256	20010613 <--
	NO 2001003004	A	20011217	NO 2001-3004	20010615 <--
	ZA 2001004931	A	20011220	ZA 2001-4931	20010615 <--
	CN 1333020	A	20020130	CN 2001-124330	20010615 <--
	JP 2002047183	A2	20020212	JP 2001-181658	20010615 <--
	NZ 512402	A	20030228	NZ 2001-512402	20010615 <--
PRAI	EP 2000-112811	A	20000616 <--		
AB	The invention relates to the use of biochem. substances for a composition for the prevention and treatment of health conditions				

caused by constriction of smooth muscle cells in organs of the human body like high blood pressure, asthma, glaucoma and tinnitus.

ST smooth muscle disease compn; **ascorbate** smooth muscle disease compn; arginine smooth muscle disease compn; magnesium compd smooth muscle disease compn

IT Flavonoids
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (bioflavonoids; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Amino acids, biological studies
 Carotenes, biological studies
 Trace elements, biological studies
 Vitamins
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (**composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
 (infusions; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
 (inhalants; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
 (injections; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Muscle, disease
 (smooth; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
 (suppositories; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
 (tablets; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT **50-81-7, Ascorbic acid**, biological studies
 52-90-4, L-Cysteine, biological studies 56-40-6D, Glycine, complex with transition metals 56-87-1, L-Lysine, biological studies 58-85-5, Biotin 59-02-9, α-Tocopherol 59-30-3, Folic acid, biological studies 59-43-8, Thiamine, biological studies 59-67-6, Niacin, biological studies 65-23-6, Pyridoxine 67-97-0, Cholecalciferol 68-19-9, Cyanocobalamin 74-79-3, L-Arginine, biological studies 83-88-5, Riboflavin, biological studies 87-89-8, Inositol 98-92-0, Niacinamide 119-13-1, δ-Tocopherol 137-08-6, Calcium pantothenate 137-66-6, **Ascorbyl** palmitate 147-85-3, L-Proline, biological studies 148-03-8, β-Tocopherol 303-98-0, Coenzyme q10 541-15-1, L-Carnitine 3211-76-5, L-Selenomethionine 5743-27-1, Calcium ascorbate 7235-40-7, β-Carotene 7439-96-5D, Manganese, chelates 7439-98-7D, Molybdenum, complex with glycine 7440-09-7D, Potassium, chelates 7440-47-3D, Chromium, complex with glycine 7616-22-0, γ-Tocopherol 7693-13-2, Calcium citrate 7757-93-9, Dicalcium phosphate 7779-25-1, Magnesium citrate 13479-54-4, Copper glycinate 14281-83-5, Zinc glycinate 14783-68-7 15431-40-0, Magnesium ascorbate 35947-07-0, Calcium glycinate 174882-69-0, Pycnogenol
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (**composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Bio Nutritional Health Service; GB 2268871 A 1994 HCAPLUS

(2) Bostom, A; Pharmacotherapy 1995, V15(4), P458 MEDLINE
 (3) Cooke, J; US 5891459 A 1999 HCAPLUS
 (4) Dioguardi Francesco, S; US 5198465 A 1993 HCAPLUS
 (5) Health Now Inc; EP 0891771 A 1999 HCAPLUS
 (6) Otsuka Pharma Co Ltd; GB 2029220 A 1980 HCAPLUS
 (7) Paul Stephen, M; US 5626883 A 1997 HCAPLUS
 (8) Rath, M; US 5650418 A 1997 HCAPLUS
 (9) Rath, M; Journal of Applied Nutrition 1996, V48/3 (68-78)
 (10) Rath Matthias, W; US 5278189 A 1994 HCAPLUS

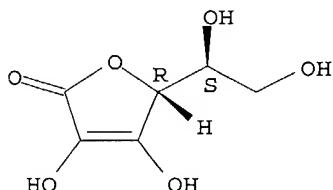
IT 50-81-7, Ascorbic acid, biological studies
 56-87-1, L-Lysine, biological studies 59-43-8,
 Thiamine, biological studies 59-67-6, Niacin, biological
 studies 83-88-5, Riboflavin, biological studies
 98-92-0, Niacinamide 137-08-6, Calcium
 pantothenate 541-15-1, L-Carnitine
 5743-27-1, Calcium ascorbate 7439-96-5D,
 Manganese, chelates 7439-98-7D, Molybdenum, complex
 with glycine 7693-13-2, Calcium citrate
 7779-25-1, Magnesium citrate 15431-40-0,
 Magnesium ascorbate

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (composition for prevention of smooth muscle diseases comprising
 ascorbate, arginine and magnesium)

RN 50-81-7 HCAPLUS

CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

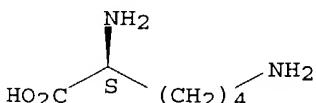
Absolute stereochemistry.



RN 56-87-1 HCAPLUS

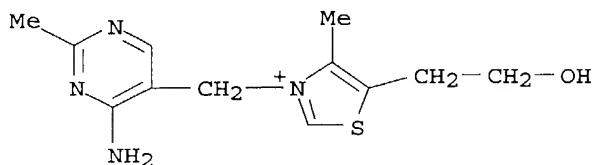
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



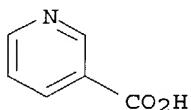
RN 59-43-8 HCAPLUS

CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-
 4-methyl- chloride (9CI) (CA INDEX NAME)



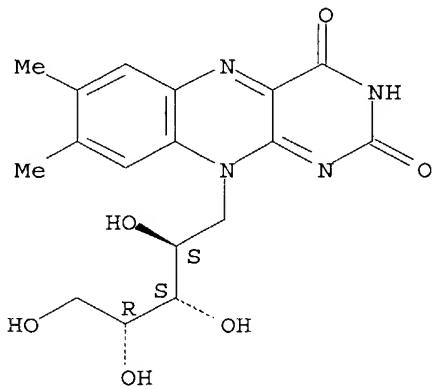
● Cl⁻

RN 59-67-6 HCAPLUS
 CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)

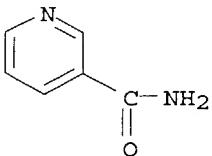


RN 83-88-5 HCAPLUS
 CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

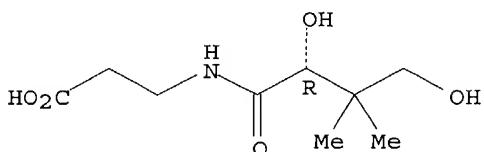


RN 98-92-0 HCAPLUS
 CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 137-08-6 HCAPLUS
 CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]-, calcium salt (2:1) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

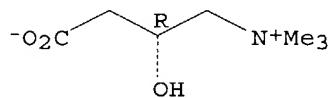


● 1/2 Ca

RN 541-15-1 HCPLUS

CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
(9CI) (CA INDEX NAME)

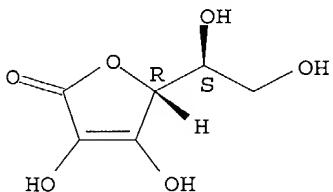
Absolute stereochemistry. Rotation (-).



RN 5743-27-1 HCPLUS

CN L-Ascorbic acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 1/2 Ca

RN 7439-96-5 HCPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

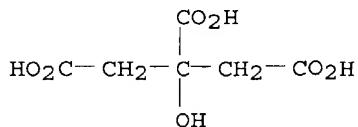
RN 7439-98-7 HCPLUS

CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

Mo

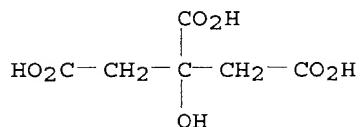
RN 7693-13-2 HCPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, calcium salt (9CI) (CA INDEX NAME)



● x Ca

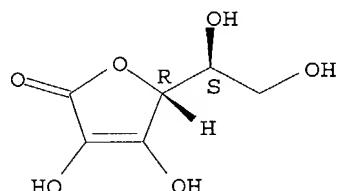
RN 7779-25-1 HCAPLUS
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (9CI) (CA INDEX NAME)



● x Mg

RN 15431-40-0 HCAPLUS
 CN L-Ascorbic acid, magnesium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 1/2 Mg

L145 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:429714 HCAPLUS
 DN 131:266358
 ED Entered STN: 13 Jul 1999
 TI Pyruvate and hydroxycitrate/carnitine may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids
 AU McCarty, M. F.; Gustin, J. C.
 CS NutriGuard Research, Encinitas, CA, 92024, USA
 SO Medical Hypotheses (1999), 52(5), 407-416
 CODEN: MEHYDY; ISSN: 0306-9877
 PB Churchill Livingstone
 DT Journal; General Review
 LA English
 CC 1-0 (Pharmacology)

Section cross-reference(s): 18

AB A review with 97 refs. containing an informal pilot trial with new data. In a recent pilot study, joint administration of **pyruvate**, **hydroxycitrate** (HCA), and **carnitine** to obese subjects was associated with a remarkable rate of body-fat loss and thermogenesis, strongly suggestive of uncoupled fatty-acid oxidation. Hepatocytes possess an uncoupling mechanism - reverse electron transport - that enables fasting ketogenesis to proceed independent of respiratory control. Electrons entering the respiratory chain at the coenzyme Q (CoQ) level via **FAD**-dependent acyl coA dehydrogenase, can be driven "up" the chain by the electrochem. proton gradient to reduce NAD⁺; if these electrons are then shuttled to the cytoplasm, returning to the respiratory chain at the CoQ level, the net result is heat generation at the expense of the proton gradient, enabling the uncoupled flow of electrons to oxygen. **Pyruvate**'s bariatric utility may stem from its ability to catalyze the rapid transport of high-energy electrons from mitochondria to the cytoplasm, thus stimulating electron shuttle mechanisms. By enabling rapid mitochondrial uptake of fatty acids and thus disinhibiting hepatocyte ketogenesis, HCA/carnitine should initiate reverse electron transport: concurrent amplification of electron shuttle mechanisms by **pyruvate** can be expected to accelerate this reverse electron transport, thereby decreasing the electrochem. proton gradient. As a result, hepatocytes may be able to convert fatty acids to CO₂ and heat with little net generation of ATP. These considerations suggest that it may be feasible to render hepatocytes functionally equivalent to activated brown fat, such that stored fat can be selectively oxidized in the absence of caloric restriction. Other measures which enhance the efficiency of hepatocyte electron shuttle mechanisms may increase the efficacy of this strategy.

ST review **pyruvate** **hydroxycitrate** **carnitine**
lipolysis

IT Lipids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(lipolysis; **pyruvate** and **hydroxycitrate**/
carnitine may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT Respiration, animal
(mitochondrial; **pyruvate** and **hydroxycitrate**/
carnitine may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT Fatty acids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(oxidation; **pyruvate** and **hydroxycitrate**/
carnitine may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT Antibiobesity agents
(**pyruvate** and **hydroxycitrate**/carnitine
may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT Drug interactions
(synergistic; **pyruvate** and **hydroxycitrate**/
carnitine may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT Diet
(therapeutic; **pyruvate** and **hydroxycitrate**/
carnitine may synergize to promote reverse electron

transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT 127-17-3, biological studies 541-15-1, Carnitine
 27750-10-3, Hydroxycitric acid
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (pyruvate and hydroxycitrate/carnitine may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

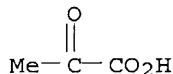
RE.CNT 97 THERE ARE 97 CITED REFERENCES AVAILABLE FOR THIS RECORD

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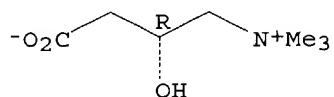
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 IT 127-17-3, biological studies 541-15-1, Carnitine
 RL: BAC (Biological activity or effector, except adverse); BSU
 (Biological study, unclassified); THU (Therapeutic use); BIOL
 (Biological study); USES (Uses)
 (pyruvate and hydroxycitrate/carnitine
 may synergize to promote reverse electron transport in
 hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty
 acids)

RN 127-17-3 HCPLUS
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L145 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:297312 HCAPLUS

DN 130:320858

ED Entered STN: 14 May 1999

TI Nutritional supplement for cerebral metabolic insufficiencies

IN Blass, John P.

PA Cornell Research Foundation, Inc., USA

SO PCT Int. Appl., 27 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM A61K031-70

ICS A61K031-715; A61K031-19

CC 1-11 (Pharmacology)

Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9921565	A1	19990506	WO 1998-US18120	19980901 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2306875	AA	19990506	CA 1998-2306875	19980901 <--
	AU 9892139	A1	19990517	AU 1998-92139	19980901 <--
	AU 760140	B2	20030508		
	EP 1032403	A1	20000906	EP 1998-944644	19980901 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2001521002	T2	20011106	JP 2000-517723	19980901 <--
	US 6537969	B1	20030325	US 2000-529091	20001020 <--
	US 2003176365	A1	20030918	US 2003-379816	20030304 <--
PRAI	US 1997-63165P	P	19971024 <--		
	WO 1998-US18120	W	19980901 <--		
	US 2000-529091	A1	20001020 <--		
AB	The present invention relates to a pharmaceutical composition which includes a sugar and a Krebs cycle intermediate, or salt thereof, or a precursor of a Krebs cycle intermediate. Krebs cycle intermediates include citric acid, aconitic acid, isocitric				

acid, α -ketoglutaric, succinic acid, fumaric acid, malic acid, and oxaloacetic acid, and mixts. thereof. Precursors of Krebs cycle intermediates are compds. converted by the body to form a Krebs cycle intermediate. The present invention also relates to administration of the pharmaceutical composition to treat an individual for a disorder involving impaired mitochondrial function and to improve cerebral function in an individual having impaired cerebral metabolism

ST nutritional supplement saccharide Krebs cycle intermediate; cerebral metabolic insufficiency glucose malate

IT Nervous system
(Huntington's chorea; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Glutamate antagonists
(NMDA antagonists; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Antioxidants
(as adjuvant; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Minerals, biological studies
Vitamins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(as adjuvant; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Heart, disease
(cardiomyopathy; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Mental disorder
(depression, neurotic; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Mental disorder
(depression; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Cardiovascular system
(disease; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Heart, disease
(failure; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Mitochondria
(function enhancement in; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Drug delivery systems
(injections, i.m.; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Drug delivery systems
(injections, i.v.; nutritional supplements containing sugars and Krebs cycle intermediates for improving impaired mitochondrial functions)

IT Drug delivery systems
(injections, s.c.; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Brain, disease
(insufficiency; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Drug delivery systems
(mucosal; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Drug delivery systems
(nasal; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Alzheimer's disease

Atherosclerosis

Musculoskeletal diseases

Nutrients

Parkinson's disease

Tricarboxylic acid cycle
 (nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Disaccharides

Monosaccharides

Polysaccharides, biological studies

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Drug delivery systems
(oral; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Drug delivery systems
(parenterals; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Mental disorder
(psychosis; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Drug delivery systems
(solns., i.p.; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Nervous system
(spinocerebellar ataxia; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT Heart, disease

Heart, disease
(valve; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

IT 77-92-9D, Citric acid, esters
110-15-6D, Succinic acid, esters
110-17-8D, Fumaric acid, esters
320-77-4D, Isocitric acid, esters

328-42-7D, Oxaloacetic acid, esters 328-50-7D,
 α -Ketoglutaric acid, esters 499-12-7D,
Aconitic acid, esters 6915-15-7D, Malic acid, esters
RL: BAC (Biological activity or effector, except adverse); BSU
(Biological study, unclassified); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(Krebs cycle intermediate precursor; nutritional
supplements containing sugars and Krebs cycle
intermediates for improving impaired mitochondrial functions)

IT 57-00-1, Creatine 59-43-8, Thiamine, biological
studies 59-67-6, Niacin, biological studies 65-23-6,
Pyridoxine 79-83-4, Pantothenic acid
83-88-5, Riboflavin, biological studies 541-15-1
, L-Carnitine
RL: BAC (Biological activity or effector, except adverse); BSU
(Biological study, unclassified); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(as adjuvant; nutritional supplements containing sugars and Krebs
cycle intermediates for improving impaired mitochondrial
functions)

IT 9000-81-1, Acetylcholinesterase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; nutritional supplements containing sugars and Krebs
cycle intermediates for improving impaired mitochondrial
functions)

IT 50-99-7, Glucose, biological studies 56-84-8, L-Aspartic acid,
biological studies 57-48-7, Fructose, biological studies 57-50-1,
Sucrose, biological studies 59-23-4, Galactose, biological studies
63-42-3, Lactose 69-79-4, Maltose 77-92-9, Citric
acid, biological studies 110-15-6, Succinic
acid, biological studies 110-17-8, Fumaric
acid, biological studies 140-86-3 320-77-4,
Isocitric acid 328-42-7, Oxaloacetic
acid 328-50-7, α -Ketoglutaric
acid 499-12-7, Aconitic acid 1518-62-3,
2,4-Dihydroxybutyric acid 3068-00-6, 1,2,4-Butanetriol 3458-28-4,
Mannose 6915-15-7, Malic acid 9005-25-8, Starch, biological
studies 22136-38-5, 2-keto-4-Hydroxybutyric acid
RL: BAC (Biological activity or effector, except adverse); BSU
(Biological study, unclassified); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(nutritional supplements containing sugars and Krebs
cycle intermediates for improving impaired mitochondrial
functions)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

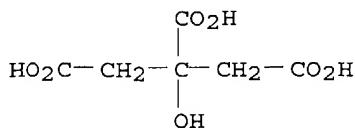
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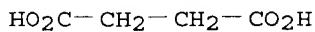
IT 77-92-9D, Citric acid, esters
110-15-6D, Succinic acid, esters
110-17-8D, Fumaric acid, esters
320-77-4D, Isocitric acid, esters
328-42-7D, Oxaloacetic acid, esters 328-50-7D,
 α -Ketoglutaric acid, esters
RL: BAC (Biological activity or effector, except adverse); BSU
(Biological study, unclassified); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(Krebs cycle intermediate precursor; nutritional
supplements containing sugars and Krebs cycle
intermediates for improving impaired mitochondrial functions)

RN 77-92-9 HCPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (9CI) (CA INDEX NAME)

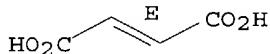


RN 110-15-6 HCAPLUS
 CN Butanedioic acid (9CI) (CA INDEX NAME)

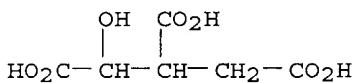


RN 110-17-8 HCAPLUS
 CN 2-Butenedioic acid (2E)- (9CI) (CA INDEX NAME)

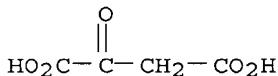
Double bond geometry as shown.



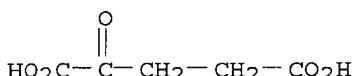
RN 320-77-4 HCAPLUS
 CN Pentaric acid, 3-carboxy-2,3-dideoxy- (9CI) (CA INDEX NAME)



RN 328-42-7 HCAPLUS
 CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)

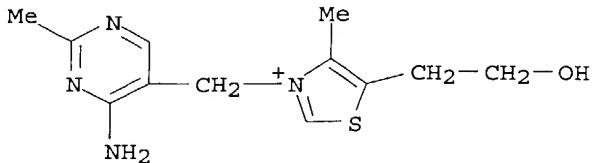


RN 328-50-7 HCAPLUS
 CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



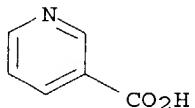
IT 59-43-8, Thiamine, biological studies 59-67-6,
 Niacin, biological studies 79-83-4, Pantothenic
 acid 83-88-5, Riboflavin, biological studies
 541-15-1, L-Carnitine
 RL: BAC (Biological activity or effector, except adverse); BSU
 (Biological study, unclassified); THU (Therapeutic use); BIOL
 (Biological study); USES (Uses)
 (as adjuvant; nutritional supplements containing sugars and Krebs
 cycle intermediates for improving impaired mitochondrial
 functions)
 RN 59-43-8 HCAPLUS
 CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-

4-methyl- chloride (9CI) (CA INDEX NAME)



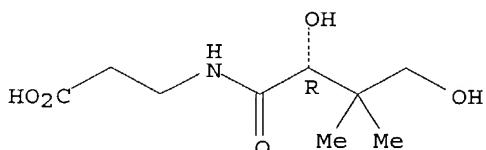
● Cl⁻

RN 59-67-6 HCAPLUS
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)



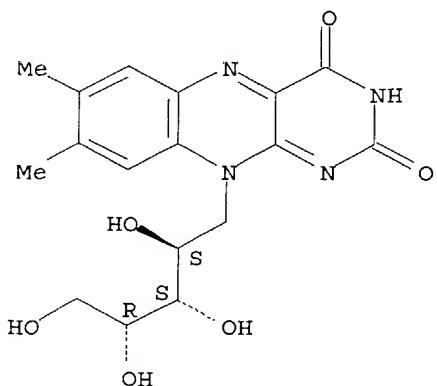
RN 79-83-4 HCAPLUS
CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



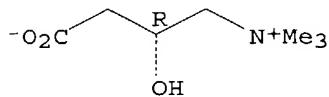
RN 83-88-5 HCAPLUS
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



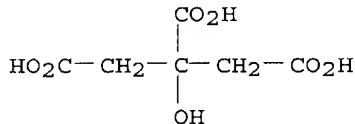
RN 541-15-1 HCAPLUS
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

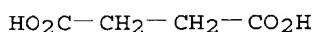


IT 77-92-9, Citric acid, biological studies
 110-15-6, Succinic acid, biological studies
 110-17-8, Fumaric acid, biological studies
 320-77-4, Isocitric acid 328-42-7,
 Oxaloacetic acid 328-50-7, α -
 Ketoglutaric acid
 RL: BAC (Biological activity or effector, except adverse); BSU
 (Biological study, unclassified); THU (Therapeutic use); BIOL
 (Biological study); USES (Uses)
 (nutritional supplements containing sugars and Krebs
 cycle intermediates for improving impaired mitochondrial
 functions)

RN 77-92-9 HCAPLUS
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (9CI) (CA INDEX NAME)

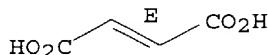


RN 110-15-6 HCAPLUS
 CN Butanedioic acid (9CI) (CA INDEX NAME)

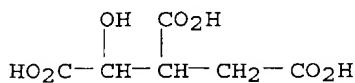


RN 110-17-8 HCAPLUS
 CN 2-Butenedioic acid (2E)- (9CI) (CA INDEX NAME)

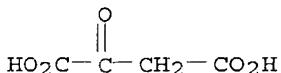
Double bond geometry as shown.



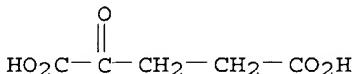
RN 320-77-4 HCAPLUS
 CN Pentonic acid, 3-carboxy-2,3-dideoxy- (9CI) (CA INDEX NAME)



RN 328-42-7 HCAPLUS
 CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)



RN 328-50-7 HCPLUS
 CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



L145 ANSWER 11 OF 13 HCPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:70355 HCPLUS
 DN 130:129986
 ED Entered STN: 02 Feb 1999
 TI Compositions comprising **lysine** and **ascorbate** compounds
 for the treatment and prevention of cardiovascular diseases
 IN Rath, Matthias
 PA Health Now, Inc., USA
 SO Eur. Pat. Appl., 14 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM A61K031-195
 ICS A61K031-375
 ICI A61K031-195, A61K031-375, A61K031-40, A61K031-59
 CC 63-6 (Pharmaceuticals)
 Section cross-reference(s): 1, 2

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 891771	A1	19990120	EP 1997-304994	19970708
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	EP 1068868	A2	20010117	EP 2000-115643	19970708
	EP 1068868	A3	20010131		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	NZ 509295	A	20021220	NZ 2001-509295	20010110
	HR 2001000023	A1	20020831	HR 2001-23	20010111
	HR 20010023	B1	20031231		

PRAI EP 1997-304994 A 19970708

AB A therapeutic **lysine**-based composition and methods for its use in the prevention and treatment of cardiovascular disease is disclosed. The composition includes at least one **lysine** compound such as **lysine**, **lysine hydrochloride**, **lysine dihydrochloride**, **lysine orotate**, **lysine succinate**, or **lysine glutamate**. The composition may also preferentially include **ascorbate**, proline and vitamin D or compds. thereof. The composition may also include N-acetylglucosamine and other compds. restoring and maintaining optimum biol. function of the vascular wall. A patient at risk of developing or with a pre-existing cardiovascular disease is treated by administering orally or parenterally a desired dosage of the composition on a daily basis.

ST **lysine** antiatherosclerotic **ascorbate** cardiovascular disease

IT Lipoproteins

RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU

(Occurrence)

(Lp(a); **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)

IT Antiarteriosclerotics

(antiatherosclerotics; **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)

IT Drug delivery systems

(carriers; **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)

IT Cardiovascular system

(disease; **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)

IT 50-81-7, **Ascorbic acid**, biological studies

56-87-1, **Lysine**, biological studies 60-32-2,

ϵ -Aminocaproic acid 67-97-0, Cholecalciferol 147-85-3,

Proline, biological studies 657-26-1, **Lysine**

dihydrochloride 657-27-2, **Lysine** hydrochloride

1197-18-8, Tranexamic acid 1406-16-2, Vitamin d 5408-52-6,

Lysine glutamate 7512-17-6, N-Acetylglucosamine 7776-34-3,

Proline hydrochloride 12001-76-2, Vitamin B 18841-57-1, **Lysine**

orotate 29324-94-5 32511-63-0, 1,25-Dihydroxyvitamin d₃ 219942-03-7

219942-06-0 219942-08-2

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(**lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Eisai Kk; JP 60087221 A 1985 HCPLUS

(2) Rath, M; US 5278189 A HCPLUS

(3) Rath, M; US 5650418 A HCPLUS

(4) Rath, M; WO 9119488 A HCPLUS

(5) Rath, M; Journal of Applied Nutrition 1996, V48/3 (68-78)

IT 50-81-7, **Ascorbic acid**, biological studies

56-87-1, **Lysine**, biological studies 657-26-1,

Lysine dihydrochloride 657-27-2, **Lysine**

hydrochloride

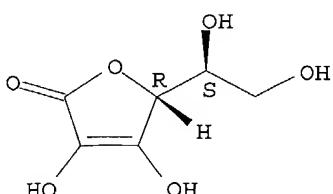
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(**lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)

RN 50-81-7 HCPLUS

CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

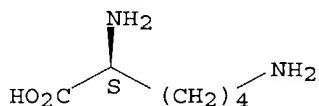
Absolute stereochemistry.



RN 56-87-1 HCPLUS

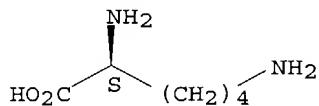
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 657-26-1 HCAPLUS
 CN L-Lysine, dihydrochloride (9CI) (CA INDEX NAME)

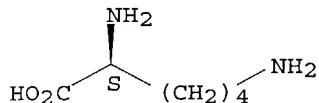
Absolute stereochemistry.



● 2 HCl

RN 657-27-2 HCAPLUS
 CN L-Lysine, monohydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.



● HCl

L145 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:576691 HCAPLUS
 DN 127:243272
 ED Entered STN: 10 Sep 1997
 TI Method and composition using purines and other compounds for inhibiting cellular irreversible changes due to stress
 IN Miller, Guy; Lou, Lillian; Nakamura, John
 PA Galileo Laboratories, Inc., USA
 SO PCT Int. Appl., 31 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM A61K031-70
 ICS C07H019-16; C07H019-20
 CC 1-12 (Pharmacology)
 Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9730713	A1	19970828	WO 1997-US2945	19970220 <--
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,			

IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML,
MR, NE, SN, TD, TG

US 5801159	A	19980901	US 1996-607022	19960223 <--
CA 2247461	AA	19970828	CA 1997-2247461	19970220 <--
AU 9719749	A1	19970910	AU 1997-19749	19970220 <--
EP 935466	A1	19990818	EP 1997-907855	19970220 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2000506834	T2	20000606	JP 1997-530408	19970220 <--
NO 9803823	A	19981001	NO 1998-3823	19980820 <--

PRAI US 1996-607022 19960223 <--
WO 1997-US2945 19970220 <--

OS MARPAT 127:243272

AB **Formulations** of naturally occurring physiol. acceptable compds. and their derivs. are provided for treatment of cellular stress, particularly hypoxia. By administering the **formulations**, comprising for the most part purines, sugars, amino acids and physiol. acceptable derivs. thereof, by themselves or in **combination** with each other and with other compds., particularly electron acceptor compds., the time to irreversible cellular changes, particularly mortality, can be greatly extended.

ST purine sugar cytoprotectant cell stress; amino acid cytoprotectant cell stress; electron acceptor cytoprotectant cell stress

IT Diet
(and dietary supplement; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Food
(and food bars; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Carboxylic acids, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydroxy; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Stress, animal
(hypoxic; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Carboxylic acids, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(oxo; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Animal tissue
Animal tissue culture
Beverages
Cytoprotective agents
Drug delivery systems
Electron acceptors
Glycolysis
Hypoxia, animal
Organ, animal
Stress, animal
Transplant and Transplantation
(purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Amino acids, biological studies
Dipeptides
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(purines and other compds. for inhibition of cellular irreversible

changes due to stress)

IT Carbohydrates, biological studies
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (reducing sugars; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT 50-44-2, 6-Mercaptopurine 50-89-5, Thymidine, biological studies
 50-99-7, D-Glucose, biological studies 53-84-9, NAD 56-40-6,
 Glycine, biological studies 56-41-7, Alanine, biological studies
 56-45-1, Serine, biological studies 56-65-5, **Adenosine triphosphate**, biological studies 56-85-9, Glutamine, biological studies 56-86-0, L-Glutamic acid, biological studies 56-87-1,
L-Lysine, biological studies 57-48-7, Fructose, biological studies 58-55-9, Theophylline, biological studies 58-61-7, Adenosine, biological studies 58-63-9, Inosine 58-64-0, **Adenosine diphosphate**, biological studies 59-23-4, Galactose, biological studies 61-19-8, 5'-Adenylic acid, biological studies 61-73-4,
 Methylene blue 63-91-2, L-Phenylalanine, biological studies 65-86-1,
 Orotic acid 68-41-7, Cycloserine 71-30-7, Cytosine 73-03-0,
 Cordycepin 73-22-3, Tryptophan, biological studies 74-79-3, Arginine, biological studies 84-21-9, 3'-Adenosine monophosphate 85-31-4,
 6-Mercaptoguanosine 107-35-7, Taurine 107-97-1, Sarcosine 118-00-3,
 Guanosine, biological studies 120-73-0D, Purine, derivs.
127-17-3, Pyruvic acid, biological studies
 131-99-7, 5'-Inosinic acid 146-80-5, Xanthosine 300-85-6
328-50-7, α-Ketoglutaric acid
 488-69-7, Fructose-1,6-diphosphate 541-50-4, Acetoacetic acid, biological studies 551-84-8, Xylulose 574-25-4, 6-Mercaptopurine riboside 598-41-4, Glycine amide 600-18-0, α-Ketobutyric acid 616-34-2, Glycine methyl ester 643-13-0, Fructose-6-phosphate 653-63-4, 2'-Deoxyadenosine monophosphate 820-11-1, 3-Phosphoglyceric acid 890-38-0, Deoxyinosine 892-48-8, 5'-Chloro-5'-deoxyadenosine 902-04-5 958-09-8, Deoxyadenosine 961-07-9, Deoxyguanosine 1053-73-2, 3',5'-**Adenosine diphosphate** 1113-60-6,
β-Hydroxypyruvic acid 1118-68-9, N,N-Dimethylglycine 2002-28-0, Ribulose-1,5-diphosphate 2004-07-1, 2-Amino-6-chloropurine riboside 2140-73-0, 1-Methylinosine 2140-77-4 2140-79-6,
 2'-O-Methyladenosine 2239-64-7 2304-12-3, Adenosine 5'-monosulfate 2457-80-9, 5'-Deoxy-5'-methylthioadenosine 3393-18-8 3458-28-4,
 Mannose 3805-37-6, 2',5'-**Adenosine diphosphate**
 4431-00-9, Aurintricarboxylic acid 4546-70-7 4754-39-6,
 5'-Deoxyadenosine 5399-87-1, 6-Chloropurine riboside 5556-48-9,
 Ribulose 5682-25-7, α-Adenosine 6915-15-7, **Malic acid** 10065-72-2, Alanine methyl ester 10139-18-1, Glucose-1,6-diphosphate 14365-44-7, 5'-Amino-5'-deoxyadenosine 20245-33-4, 7-Methylinosine 20762-30-5, Adenosine 5'-diphosphoribose 24280-93-1, Mycophenolic acid 24386-93-4, 5-Iidotubercidin 27025-41-8, Oxidized glutathione 29884-64-8, Threose 29886-19-9, 2', 3'-Di-O-acetyladenosine 32266-35-6, Dibutyryl cyclic GMP 35899-54-8 38048-32-7,
 S-4-Nitrobenzyl-6-thioinosine 41552-82-3, N6-Cyclopentyladenosine 51350-19-7, erythro-9-(2-Hydroxy-3-nonyl)adenine 53296-10-9,
 2-Phenylaminoadenosine 56964-73-9 79082-92-1, Fructose-2,6-diphosphate 102029-71-0, Adenosine 5'-succinate 195503-37-8
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT 53-84-9, NAD 56-65-5, **Adenosine triphosphate**, biological studies 56-87-1, **L-Lysine**, biological studies 58-64-0, **Adenosine diphosphate**, biological studies 127-17-3,

Pyruvic acid, biological studies 328-50-7,

α -Ketoglutaric acid

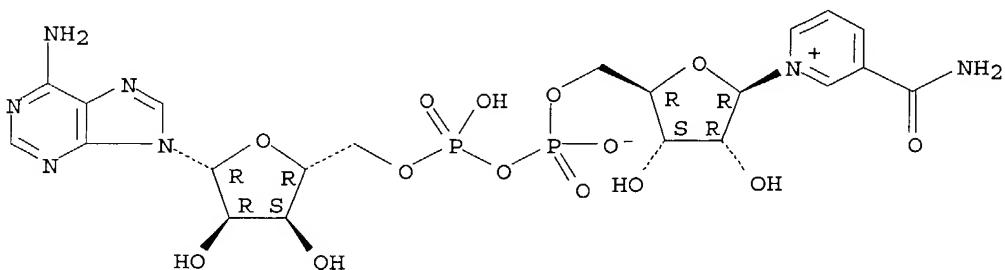
RL: **BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)**

(purines and other compds. for inhibition of cellular irreversible changes due to stress)

RN 53-84-9 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with 3-(aminocarbonyl)-1- β -D-ribofuranosylpyridinium, inner salt (9CI) (CA INDEX NAME)

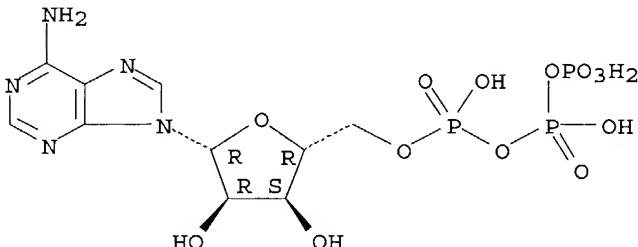
Absolute stereochemistry.



RN 56-65-5 HCAPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

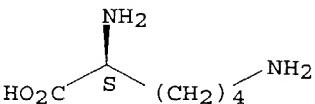
Absolute stereochemistry.



RN 56-87-1 HCAPLUS

CN L-Lysine (9CI) (CA INDEX NAME)

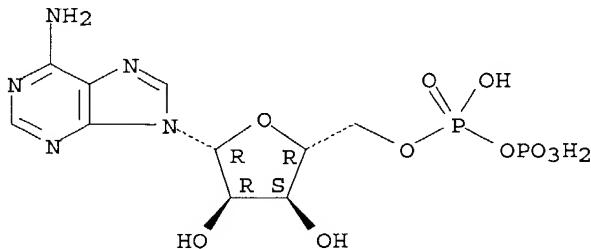
Absolute stereochemistry.



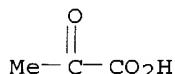
RN 58-64-0 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

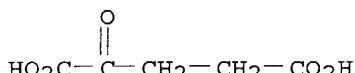
Absolute stereochemistry.



RN 127-17-3 HCAPLUS
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 328-50-7 HCAPLUS
 CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



L145 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:132781 HCAPLUS
 DN 126:139892
 ED Entered STN: 28 Feb 1997
 TI Processes, compounds, and compositions for augmented ATP production, and therapeutic and other uses
 IN Fahy, Gregory M.
 PA Organ, Inc., USA; Life Resuscitation Technologies, Inc.
 SO PCT Int. Appl., 43 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM A61K031-70
 ICS A61K031-115
 CC 1-10 (Pharmacology)
 Section cross-reference(s): 9, 13, 18, 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9640167	A1	19961219	WO 1996-US10255	19960607 <--
	W: AU, CA, CN, JP, KR, SG				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5707971	A	19980113	US 1995-476035	19950607 <--
	CA 2223327	AA	19961219	CA 1996-2223327	19960607 <--
	AU 9661754	A1	19961230	AU 1996-61754	19960607 <--
	EP 831853	A1	19980401	EP 1996-919403	19960607 <--
	R: BE, CH, DE, ES, FR, GB, IT, LI, NL, SE, IE				
PRAI	US 1995-476035		19950607 <--		
	WO 1996-US10255		19960607 <--		
AB	Delivery of fuel and cofactors augments ATP production in cells, and mitigates damages in ischemic or metabolically impaired tissues. The processes may				

be particularly effective in acute or chronic ischemic conditions, for reversing anesthesia, for treating diabetes, for producing or preventing coma due to lack of fuel of ATP, for reversing processes of aging, as dietary supplements, as performance enhancers (e.g. for sports), for tissue transplantation and other surgery, and for cold storage or cryopreservation of tissues such as organs. Compds. disclosed include NAD+, CoA, **acetyl CoA**, glyceraldehyde-3-phosphate, etc.

ST ATP augmentation ischemia diabetes anesthesia reversal; diet supplement pharmaceutical ATP augmentation; aging athletic performance enhancer ATP augmentation; transplantation surgery cryopreservation ATP augmentation; oxidative metab impairment ATP augmentation; NAD CoA **acetyl CoA** ATP augmentation; glyceraldehyde phosphate ATP augmentation

IT Antidiabetic agents
Blood products
Cytoprotective agents
Drug delivery systems
Exercise
Hypothermia
Hypoxia, animal
Ischemia
Surgery
Transplant and Transplantation
(ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Exercise
(athletic performance; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Drug delivery systems
(controlled-release; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Organ preservation
(cryopreservation; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Hypoglycemia
(death associated with; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Coma
(diabetic; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Death
(hypoglycemia-associated; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Drug delivery systems
(oral; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT **Metabolism**
(oxidative, tissue with impaired; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Aging, animal
(reversal of processes of; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Anesthesia
(reversal; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

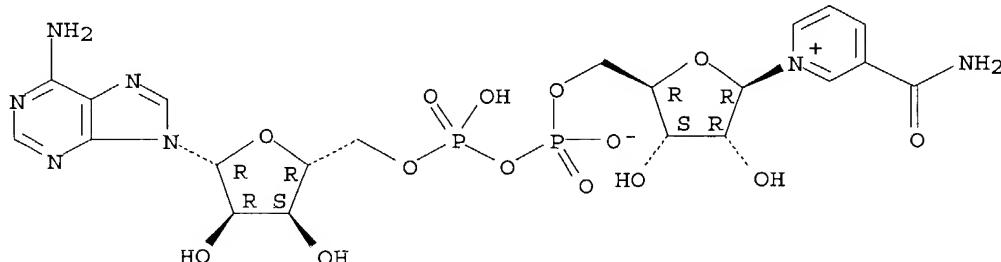
IT Kidney
(slices, cold storage; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Diet
(supplements; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT 53-84-9, NAD 72-89-9, **Acetyl CoA**
79-43-6, Dichloroacetic acid, biological studies 85-61-0, CoA,

biological studies 127-17-3, biological studies 138-08-9,
Phosphoenol pyruvic acid 138-81-8,
 2,3-Diphosphoglyceric acid 488-69-7, Fructose-1,6-bisphosphate
541-15-1, Carnitine 591-59-3, Glyceraldehyde-3-
 phosphate 820-11-1, 3-Phosphoglyceric acid 14992-62-2, Acetyl
carnitine
 RL: **BAC (Biological activity or effector, except adverse); BSU**
 (Biological study, unclassified); **BUU (Biological use, unclassified);**
THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (ATP augmentation processes, compds., and compns., and
 therapeutic and other uses)
 IT 56-65-5, biological studies
 RL: BPR (Biological process); BSU (Biological study, unclassified); MFM
 (Metabolic formation); BIOL (Biological study); FORM (Formation,
 nonpreparative); PROC (Process)
 (ATP augmentation processes, compds., and compns., and
 therapeutic and other uses)
 IT 7782-44-7, Oxygen, biological studies
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
 (Biological study); PROC (Process)
 (deficit; ATP augmentation processes, compds., and compns.,
 and therapeutic and other uses)
 IT 50-99-7, D-Glucose, biological studies
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
 (Biological study); PROC (Process)
 (metabolism, defect; ATP augmentation processes, compds., and
 compns., and therapeutic and other uses)
 IT 53-84-9, NAD 72-89-9, **Acetyl CoA**
 127-17-3, biological studies 541-15-1, **Carnitine**
 RL: **BAC (Biological activity or effector, except adverse); BSU**
 (Biological study, unclassified); **BUU (Biological use, unclassified);**
THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (ATP augmentation processes, compds., and compns., and
 therapeutic and other uses)
 RN 53-84-9 HCAPLUS
 CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with
 3-(aminocarbonyl)-1-β-D-ribofuranosylpyridinium, inner salt (9CI)
 (CA INDEX NAME)

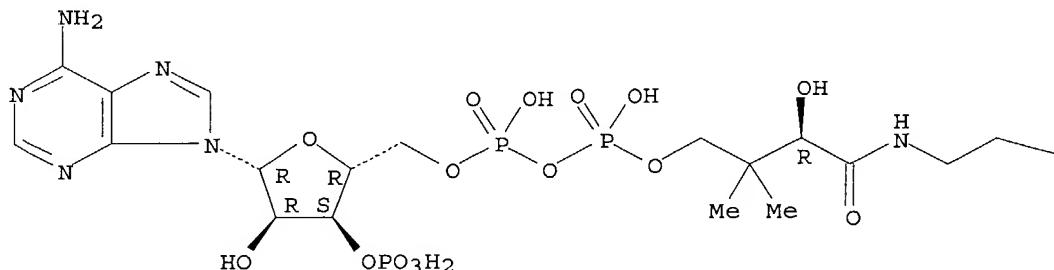
Absolute stereochemistry.



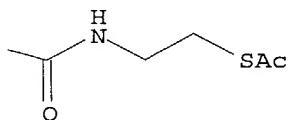
RN 72-89-9 HCAPLUS
 CN Coenzyme A, S-acetate (6CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

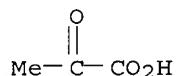
PAGE 1-A



PAGE 1-B

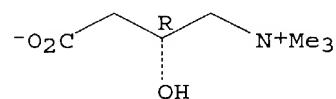


RN 127-17-3 HCAPLUS
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)- (9CI) (CA INDEX NAME)

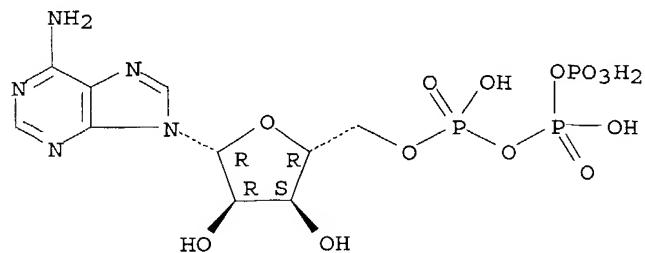
Absolute stereochemistry. Rotation (-).



IT 56-65-5, biological studies
 RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
 (ATP augmentation processes, compds., and compns., and therapeutic and other uses)

RN 56-65-5 HCAPLUS
 CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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